IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

PAR PHARMACEUTICAL, INC., PAR STERILE PRODUCTS, LLC, and ENDO PAR INNOVATION COMPANY, LLC,	)	
Plaintiffs,	)	C.A. No. 18-823-CFC
v.	)	
EAGLE PHARMACEUTICALS INC.,	)	
Defendant.	)	

DEFENDANTS' PROPOSED FINDINGS OF FACT
REGARDING NONINFRINGEMENT

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Defendant Eagle Pharmaceuticals Inc. ("Eagle") respectfully submits its proposed Findings of Fact Regarding Noninfringement, which follows the numbering of Defendants proposed Findings of Fact Regarding Invalidity and Unenforceability.

FINDINGS OF FACT

VII. NONINFRINGEMENT

319. Eagle's Abbreviated New Drug Application No. 211538 ("Eagle's ANDA") seeks approval to engage in the commercial manufacture, use, and sale of a proposed generic vasopressin product, Vasopressin Injection USP, 20 units/1 mL ("Eagle's ANDA Product"), identifying Vasostrict as the reference listed drug. (E-SF ¶39.)

320. Eagle's ANDA "specifies the original version of Vasostrict, approved April 17, 2014, [("Original Vasostrict")] as the RLD," or Reference Listed Drug. (DTX-131.1; Park Tr. at 347:11–17, 348:5–9, 348:16–20.)

321. Each of the Asserted Patents is listed in the FDA publication titled "Approved Drugs With Therapeutic Equivalence Evaluations" (the "Orange Book") as covering Vasostrict. (E-SF ¶34.)

322. Each Asserted Claim of the Asserted Patents requires a vasopressin formulation that "has a pH of 3.7–3.9." (*See* E-SF ¶¶35–36; FF ¶¶58–59; Park Tr. at 345:17–21.)

323. Par considers the full scope of the limitation "a pH of 3.7-3.9" in the Asserted Claims to include any pH from 3.65 to 3.94 based on rounding. (Kirsch Tr. 210:2–21, 850:12–16; Park Tr. 411:18–22.)

324. Par has accused Eagle's ANDA Product and its prescribing information of infringing each of the Asserted Claims of the Asserted Patents. (E-SF ¶¶35–36.)

325. Par has asserted only literal infringement of the Asserted Claims, and has not asserted infringement under the doctrine of equivalents. (*See generally* D.I. 1.)

326. Eagle does not, and will not, infringe any of the Asserted Claims of the Asserted Patents, directly or indirectly. (FF¶¶327–526)

A. Eagle Seeks Approval for a Generic Version of Original Vasostrict

327. Eagle's ANDA Product has the same ingredients, in the same amounts, as Original Vasostrict. (*See* DTX-131.1; Park Tr. at 347:22–48:4.)

328. Eagle's ANDA Product and Original Vasostrict both use "Acetic Acid to adjust pH to 3.4 – 3.6." (DTX-131.1; Park Tr. at 347:22–48:4, 348:21–49:4).

329. Although Eagle's ANDA Product has the same ingredients in the same amounts as Original Vasostrict, the pH specifications for Eagle's ANDA Product at release and over its shelf life are narrower than Original Vasostrict's. (*Compare* DTX-26.26 *with* DTX-327.1; *see also* DTX-678.2; PTX-1427 at 1.)

330. The release specification for Original Vasostrict was pH 3.3 to 4.0. (Park Tr. 412:20–24; DTX-26.26.)

331. The stability specification for Original Vasostrict was pH 2.5 to 4.5. (Park Tr. 412:20–24; DTX-26.26.)

332. Original Vasostrict was permitted by its specification to drift outside of pH 3.4–3.6, including into the claimed pH range 3.7–3.9, over its shelf life. (Park Tr. 412:20–24; Kirsch Tr. 815:20–16:11; DTX-26.26; FF ¶¶330–331.)

333. In contrast, Eagle modified its manufacturing process and specifications to prohibit drift outside of the range pH 3.4–3.6. (FF ¶¶ 334, 361–374)

B. Eagle's ANDA Specification Defines a Non-Infringing Product

334. Both the release specification and stability specification for Eagle's ANDA require a pH of 3.4–3.6. (DTX-327.1; *see also* DTX-678.2; PTX-1427 at 1; Park Tr. at 349:5–50:2.)

335. In order to comply with its specifications, Eagle's ANDA Product must have a pH of 3.4–3.6 at release and over its entire shelf life. (Park Tr. at 348:21–50:2; ; Kirsch Tr. 297:5–12, 298:2–12.)

336. There is no overlap between the release and stability pH specifications of Eagle's ANDA Product and the claimed pH range 3.7–3.9 in the Asserted Claims of the Asserted Patents. (Park Tr. at 345:17–21, 349:5–50:2.)

337. A vasopressin product that meets Eagle's release and stability specifications cannot infringe the Asserted Claims of the Asserted Patents, as each Asserted Claim requires a pH of 3.7–3.9. (Park Tr. at 345:17–21, 349:21–50:2; Kirsch Tr. 298:9–12 ("Q. Any batch that's compliant with the release of stability specification would not infringe; correct? A. Well, I agree, but they wouldn't know what the pH is in our tested batch.").)

338. Both the release specification and stability specification are part of Eagle's ANDA submission to the FDA, for which Eagle seeks the FDA's approval. (Park Tr. at 349:5–50:2.) Accordingly, Eagle is seeking approval only for a product that has a pH within the range 3.4 to 3.6 on release and during its entire shelf life. (*Id.*; DTX-327.1; *see also* DTX-678.2; PTX-1427 at 1.)

339. Eagle is not seeking approval for a product that is released at pH 3.4 to 3.6, but that can later drift into the claimed range 3.7 to 3.9 during its shelf life. (Park Tr. at 349:21–50:2.) Such a product would be non-compliant with Eagle's stability specification, which requires a pH of 3.4 to 3.6 over the entire shelf life of the product. (Park Tr. at 349:21–50:2; Kirsch Tr. 298:9–12.)

C. Eagle's Batch Data Also Demonstrates Noninfringement

340. Eagle, through its joint venture partner Albany Molecular Research Inc. (AMRI), has manufactured and placed on stability a number of batches of its ANDA Product: three "registration" batches (SVA001–003), three "characterization"

batches (SVA004–006), three "optimization/confirmation" batches (SVA007–009), and three PPQ batches (SVA011–013). (E-SF ¶46, Park Tr. 353:5–7.)

341. AMRI also manufactured batches SVA014, SVA016 and SVA017, but those batches have not been placed on stability and so do not, and will not, have stability data. (Park Tr. 354:7–10.)

342. Batches SVA010 and SVA015 were aborted during manufacture for reasons unrelated to the issues in dispute in this action. (Park. Tr. 354:11–19.)

343. The fact that some batches were aborted or rejected shows "[t]here's a good quality control in place," such that "if the batch does not meet the criteria of each step of the process, they are not going to release the batch." (Park Tr. 354:11–19.)

1. Eagle's Registration and Characterization Batches

344. Registration Batches SVA001–003 were manufactured in March 2017. (E-SF ¶45; Park Tr. 375:24–76:4.)

345. Eagle was not involved in the manufacture of the Registration Batches. (Kirsch Tr. 262:4–15 ("Q. You see the customer there, that is indicated there on the OSO form is Sagent Pharmaceuticals in the upper right? A. I see is that. Q. You have not seen evidence that Eagle was involved in this point in time? A. I have not seen any evidence.").)

346. Registration Batches SVA001–003 were manufactured before the Asserted Patents were published or issued by the PTO. (*Compare* FF ¶346 *with* JTX-2 at PAR-VASO_0295216 ('209 patent published June 8, 2017, issued Aug. 29, 2017), JTX-3 at PAR-VASO_0295378 ('785 patent published June 8, 2017, issued Sept. 5, 2017); Park Tr. 376:5–7; Kirsch Tr. 262:4–6, 262:16–22, 263:7–12.)

347. The Registration Batches were manufactured with a pH adjustment to 3.4–3.6, and pH a target of 3.5, during compounding. (*See, e.g.*, DTX-319.109–12; Park Tr. 371:14–19.)

348. The Registration Batches had in-process, pre-filtration and post-filtration pH specifications of 2.5–4.5. (DTX-288.1; Park Tr. 373:16–24.)

349. The Registration Batches had pH release and stability pH specifications of 2.5–4.5. (DTX-323.12–13; Park Tr. 375:15–20; Kirsch Tr. 263:17–21.)

350. At the time of manufacturing SVA001, the pH release and stability specifications for that batch were 2.5–4.5. (DTX-288.1; Park Tr. 375:15–20.)

351. Every pH measurement obtained for SVA001 was compliant with the pH specifications that were in place at the time of its manufacturing. (Park Tr. 374:9–23; Kirsch Tr. 266:2–5.)

352. Eagle partnered with AMRI to file an ANDA for its ANDA Product after the Registration Batches were manufactured, but while they were on stability. (Aungst Tr. 174:24–75:7; Kirsch Tr. 262:4–15.)

353. After manufacture of the Registration Batches, and after the issuance of the Asserted Patents, Eagle narrowed the release and stability specifications for its ANDA Product to 3.4–3.6. (DTX-327.1; Park Tr. 375:21–23; Kirsch Tr. 264:20–24.)

354. Characterization Batches SVA004–006 were manufactured in March and April 2019. (E-SF ¶46; Park Tr. 352:2–9.)

355. Characterization Batches SVA004–006 were manufactured "in accordance with the manufacturing process used for the registration batches." (E-SF ¶47; DTX-331; Park Tr. 352:10–22.)

356. Eagle placed samples from Batches SVA001–006 into stability studies to evaluate whether these batches would remain in-specification over their shelf lives. (Park Tr. at 353:18–54:10; DTX-331.4, 20.)

357. Eagle performed three distinct stability studies, storing the samples at: (1) room temperature for 12 months; (2) refrigerated temperature for 24 months; and (3) refrigerated temperature for a period of time (12 months for the Registration Batches and 21 months for the Characterization Batches), followed by room temperature for a period of time (12 months for the Registration Batches and 7.5 months for the Characterization Batches). (DTX-331.4–7, 20–23; *see also* DTX-727.4–7, 20–23; PTX-1427 at 4–7, 20–23; Park Tr. at 353:18–54:10). Samples were stored in both upright and inverted positions. (*See id*.).

358. During the stability study for SVA001, "[a] single data point for batch SVA001 at the 2-8°C storage condition fell just outside the upper pH limit of 3.64 at proposed expiry; the 24-month upright sample result was 3.69 (rounded to 3.7). The result was confirmed through re-testing and deemed out-of-specification." (DTX-331.9; DTX-727.9; *see also* DDX7-1; DTX-993.1; Park Tr. 357:19–58:2.)

359. All other pH measurements for SVA001 and all other Registration and Characterization Batches remained within the stability specification of 3.4–3.6 over their shelf lives. (Park Tr. 357:3–58:10; *see also* DDX7-1; DTX-993.)

360. After an investigation into the lone out-of-specification result for SVA001, "[t]he root cause . . . was determined to be batch SVA001 was released at the upper limit of the pH specification" at a pH of 3.64. (DTX-331.9; DTX-727.9; Park Tr. at 362:2–10.)

2. Eagle Modified the Manufacturing Process After Recording the Out of Specification Result for SVA001

361. In response to the single out-of-specification pH test result for SVA001, "the manufacturing in-process controls were subsequently optimized to assure tighter control of pH" between 3.4–3.6 and to "provide greater confirmation of consistent product quality through the proposed expiry period." (DTX-331.9; DTX-727.9; PTX-1433 at 9; Park Tr. 362:11–20.)

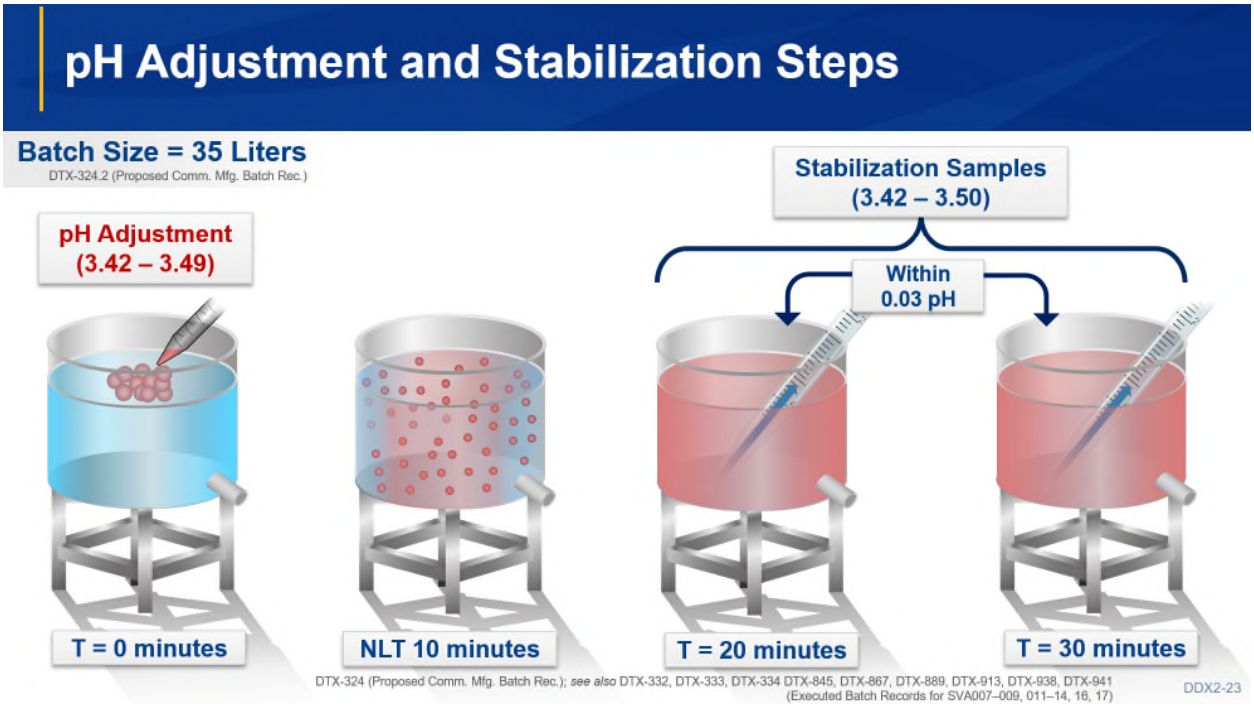
362. As part of the manufacturing optimizations, Eagle narrowed the specified pH range for pH adjustment/compounding from 3.4–3.6 with a target of 3.5 (for the Registration Batches) to 3.42–3.49 with a target of 3.45 (for the optimized batches). (*Compare* DTX-323.5 *with* DTX-323.10, 16; *see also* DTX-324.25 (proposed commercial batch record showing pH adjustment step requires "Bottom pH (3.42 to 3.49)"); Park Tr. 363:15–24, 371:14–72:2.)

363. After the pH adjustment step, Eagle added a new pH stabilization step to ensure pH uniformity of the batch, which requires mixing the solution for no less than 20 minutes, and then pulling samples from the mixing vessel at a 10-minute interval thereafter (*e.g.*, two pH measurements at 20 minutes and 30 minutes). (DTX-323.10, 16; DTX-324.27; Park Tr. 365:7–13, 372:3–8.)

364. Each pH measurement taken during the pH stabilization step must be within 0.03 pH of the preceding measurement. (DTX-323.10, 16; DTX-324.27; Park Tr. 365:23–66:2.) Thus, for example, if a measurement taken at 20 minutes yields a pH value 3.45, the subsequent measurement taken at 30 minutes must have a value within 3.42–3.48, *i.e.*, ±0.03 of 3.45. (*Id.*)

365. As illustrated in the following demonstrative (DDX2-23), the acceptable pH range for the pH stabilization step for Eagle's ANDA Product is 3.42–3.50. (DTX-323.10, 16; DTX-324.27; Park Tr. 365:21–22, 372:9–13.) Accordingly, each pH measurement taken during the pH stabilization step must not only be within

0.03 pH of the preceding measurement, but both such measurements must also be within the range of pH 3.42–3.50. (DTX-323.10, 16; DTX-324.27; Park Tr. 365:19–66:2, 372:9–13.)



(DDX2-23.)

366. If the two pH measurements taken during the stabilization step are both within the range of 3.42–3.50, but not within 0.03 pH of each other, the batch is mixed further and another pH measurement is taken at a 10-minute interval until two consecutive measurements are within 0.03 pH of each other. (Park Tr. 366:12–21; *see, e.g.*, DTX-324.27 ("Continue [step] until pH is stable. pH is considered stable if pH results for the 20 and 30 minute bottom test samples are 3.42 to 3.50 and within ± 0.03 of each other.").)

367. During the pH stabilization step, if a pH measurement is outside of the range of 3.42–3.50, "you go all the way back to pH adjustment and start all over again." (Park Tr. 366:8–11; *see, e.g.*, DTX-324.27 ("If pH is not within pH Stabilization specification, continue with pH adjustment on the next page.").)

368. The pH adjustment and pH stabilization steps are repeated at both the 95% QS (*i.e.*, "quantity sufficient"; the volume in the mixing vessel is 95% of the intended total) and 100% QS steps. (DTX-323.10; DTX-324.24–27 (steps at 95% QS); DTX-324.35–38 (steps at 100% QS); Park Tr. 363:15–64:11.)

369. The purpose of the pH stabilization step is to ensure "[c]omplete homogeneous mixing." (Park Tr. 366:22–67:1.)

370. As part of the pH stabilization step, samples to test pH are collected from the bottom of the vessel because the "[a]cetic acid is [added to] the top" of the vessel, so testing the bottom ensures the solution has been "homogeneously mix[ed]." (Park Tr. 365:14–18.)

371. However, a homogeneous solution does not ensure every pH measurement will be exactly the same, because "[e]ven if you measure [the] same sample, it's not going to be exactly the same, but around the same value." (Park Tr. 368:10–16.)

372. Eagle also narrowed the in-process, pre-filtration and post-filtration pH specifications from 2.5–4.5 (for the Registration Batches) to 3.42–3.54 (for the optimized batches). (DTX-323.12–13; Park Tr. 373:12–74:2.)

373. These process modifications are designed to prevent Eagle's ANDA Product from being released "at the upper limit of the pH specification," (i.e., 3.64), and instead toward "the middle of the pH specification (i.e., 3.50)." (DTX-331.9, 24; DTX-727.9, 25; PTX-1433 at 9, 25.)

374. Eagle's pH adjustment and pH stabilization steps are designed to "ensure the pH remains within the established [pH] range during finished product manufacturing and through the proposed shelf life." (DTX-133.21; DTX-331.24; DTX-727.25; PTX-1433 at 25.)

375. Eagle manufactured Optimization Batches SVA007–009 using the optimized manufacturing process. (Park Tr. at 352:23–53:4, 360:24–61:16; *see generally* DTX-332 (SVA007 MBR); DTX-333 (SVA008 MBR); DTX-334 (SVA009 MBR).)

376. The Optimization Batches were manufactured in July and August 2019. (E-SF ¶48.)

377. Eagle also manufactured Process Performance Qualification ("PPQ") Batches SVA011–013 between November and December 2020 using the optimized

manufacturing process. (Park Tr. 353:5–11; *see also* Kirsch Tr. 241:2–5 (describing meaning of "PPQ").)

378. The pH data for the Optimization Batches, PPQ Batches and subsequent batches demonstrate that Eagle's goal of releasing batches from manufacturing at a pH at or near the middle of its release specification is reproducible: batches SVA007–009 were released from manufacturing at pH values of 3.50, 3.52, and 3.48, respectively, and batches SVA011–014, and 17 were released from manufacturing at pH values of 3.52, 3.48, 3.49, 3.49, and 3.47, respectively. (DDX7-1; DTX-993.1; Park Tr. 380:6–15, 385:1–13; Kirsch Tr. 278:16–25.)

379. SVA001 would not have met the in-process pH specifications of Eagle's optimized commercial manufacturing process. (Park Tr. 374:24–75:7; *compare* DTX-323.12–13 (in-process pH specifications) *with* DTX-134.1 (SVA001 Certificate of Analysis).) Specifically, the pre-filtration pH value of SVA001 was 3.7, and the post-filtration pH value of SVA001 was 3.6. (DTX-134.1.) While these values were compliant with the in-process specification of pH 2.5 to 4.5 that applied to SVA001 at the time of its manufacturing, (DTX-134.1), these values do not conform to the in-process specification that was narrowed for the optimized batches, which requires a pH value between 3.42–3.54. (DTX-323.12–13; Park Tr. 373:12–74:2.) In addition, no stabilization step was included in the manufacturing process at the time SVA001 was manufactured. (DTX-323.5; Park Tr. 372:3–8.)

380. Although Dr. Kirsch opined "that the FDA is going authorize Eagle to put on the market a drug that has the same characteristics as SVA1," (Kirsch Tr. 321:9–12), Dr. Kirsch's "premise" is incorrect because SVA001 would not meet Eagle's optimized in-process specifications, (FF ¶379; Kirsch Tr. 321:13–25 ("The Court: How do you reconcile that? If [the FDA] know[s] SVA1 doesn't meet the stability specification requirement, why would they ever allow that, an SVA1 drug to be on the market? A. Well, I don't really know the answer to that. . . .").)

381. Dr. Kirsch conceded that "[the FDA] [is] concerned about out-of-specification values because they put out guidance on this." (Kirsch Tr. 321:13–25.)

382. Although Dr. Kirsch opined that "SVA1 [is] the same product as SVA13 . . . [b]ased on the quality characteristics that define [] that product," which in turn are "based on the specifications that [Eagle] set forth," (Kirsch Tr. 322:1–19), this opinion ignores the fact that SVA013 was made using a different manufacturing process than SVA001, with additional optimized stabilization steps and narrower pH specifications specifically intended to control pH and avoid release of a batch with the characteristics of SVA001. (*See, e.g.*, FF¶¶362–374.)

383. Although Dr. Kirsch testified that "[manufacturing processes] are not typically given to the FDA," (Kirsch Tr. 322:12–19), Eagle submitted its proposed commercial manufacturing batch record to the FDA to represent the manufacturing

process for Eagle's ANDA Product. (*See generally* DTX-324; *see also* DTX-133.21; Park Tr. at 364:12–18, Colloquy Tr. 466:18–67:4).

384. Because Eagle optimized its manufacturing process to better control pH, SVA001–006 are "representative of some properties of [Eagle's ANDA] product, but not pH." (Park Tr. at 352:17–22, 375:8–14).

385. Instead, SVA007–009 and 011–13 better represent the pH of Eagle's ANDA Product. (Park Tr. 353:12–17; Kirsch Tr. 273:2–24; PTX-1433 (directing FDA to details of Eagle's "manufacturing process optimization" when characterizing pH of ANDA Product); DTX-133.21 (noting SVA007–009 "confirm [Eagle's] proposed commercial process.").)

3. Eagle's Stability Data Show There is No Likelihood of Infringement

386. All available data show that Eagle's product will maintain pH between 3.4 and 3.6. (Park Tr. at 349:21–50:9.)

387. Like SVA001–006, Eagle placed samples from each of batches SVA007–009 and SVA011–013 in storage for stability studies. (DTX-727; FF¶340.)

388. Over the course of four years and twelve batches of vasopressin product, Eagle has taken pH stability measurements at 344 unique time points. (DDX7-1; DTX-993.1, 5, 7, 9; Park Tr. 351:5–7.)

389. Of the pH stability measurements at 344 unique time points, at only one time point, from one batch (SVA001), was the pH out-of-specification. (DDX7-1; DTX-993.1, 5, 7, 9; Park Tr. 355:17–58:22.)

390. Each pH measurement obtained for batch SVA001 stored inverted under refrigerated storage fell within the 3.4 to 3.6 range specified by the prescribing label for Eagle's ANDA Product ("Eagle's Label") and ANDA specification. (DDX7-1; DTX-993.1; Park Tr. 355:17–58:22; *see also* DTX-121.1.)

391. Dr. Kirsch conceded that "[he] didn't notice that there was any pattern" with respect to pH changes between upright and inverted samples placed on stability. (Kirsch Tr. 316:1–9.)

392. Each pH measurement obtained for batch SVA001 stored for 12 months at room temperature fell within the 3.4 to 3.6 range specified by Eagle's Label and ANDA specification. (DDX7-1; DTX-993.5; Park Tr. 355:17–56:4; Kirsch Tr. 306:11–14.)

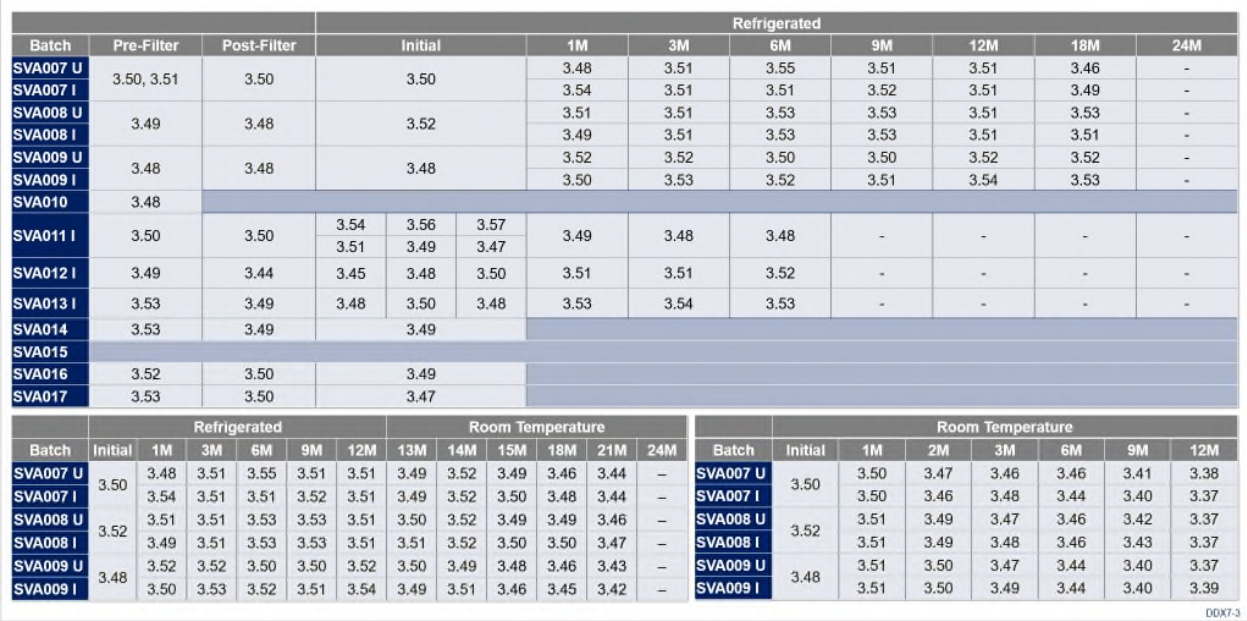
393. Each pH measurement obtained for batch SVA001 stored for 21 months under refrigerated storage, followed by 7.5 months at room temperature, fell within the 3.4 to 3.6 range specified by Eagle's Label and ANDA specification. (DDX7-1; DTX-993.7; Park Tr. 356:13–57:2.)

394. Stability data for batches SVA007–009 are currently available through 21 months of storage, and every pH measurement has been within specification. (*See* DDX7-3; DTX-993.1, 5, 7, 9; Park Tr. at 358:11–22).

395. "[T]he data that's available for SVA7 does not indicate that it's going to go anywhere near 3.65," and the same is true for SVA008 and 009 (Kirsch Tr. 280:14–21; Park Tr. 386:1–21.)

396. Stability data for the SVA011–013 batches are currently available through 6 months of storage, and every pH measurement has been within specification. (DDX7-3; DTX-993.1; Park Tr. 355:17–58:22).

397. Eagle's stability data demonstrate that its optimized manufacturing process has been successful in more tightly controlling the pH of Eagle's ANDA Product and lowering it away from the claimed range. (*See* DDX7-1; DTX-993; Kirsch Tr. 287:2–17 ("Q. Okay. So I take it that you would agree that the manufacturing process changes that were implemented for SVA7 onward have worked to reduce the pH value from what you saw in SVA1 that you talked about; is that correct? A. These pH values are less than what we've seen in SVA1.").) The following demonstrative recites the available pH data of Eagle's optimized batches (SVA007–017), and as can be seen, Eagle's data are tightly centered around 3.50. (Park Tr. 358:11–22; 360:6–13; 361:2–16; 377:21–78:3.)



			Refrigerated								
Batch	Pre-Filter	Post-Filter	Initial	1M	3M	6M	9M	12M	18M	24M	
SVA007 U	3.50, 3.51	3.50	3.50	3.48	3.51	3.55	3.51	3.51	3.46	-	
SVA007 I				3.54	3.51	3.51	3.52	3.51	3.49	-	
SVA008 U	3.49	3.48	3.52	3.51	3.51	3.53	3.53	3.51	3.53	-	
SVA008 I				3.49	3.51	3.53	3.53	3.51	3.51	-	
SVA009 U	3.48	3.48	3.48	3.52	3.52	3.50	3.50	3.52	3.52	-	
SVA009 I				3.50	3.53	3.52	3.51	3.54	3.53	-	
SVA010	3.48										
SVA011 I	3.50	3.50	3.54 3.56 3.57 3.51 3.49 3.47	3.49	3.48	3.48	-	-	-	-	
SVA012 I	3.49	3.44	3.45 3.48 3.50	3.51	3.51	3.52	-	-	-	-	
SVA013 I	3.53	3.49	3.48 3.50 3.48	3.53	3.54	3.53	-	-	-	-	
SVA014	3.53	3.49	3.49								
SVA015											
SVA016	3.52	3.50	3.49								
SVA017	3.53	3.50	3.47								

	Refrigerated						Room Temperature					
Batch	Initial	1M	3M	6M	9M	12M	13M	14M	15M	18M	21M	24M
SVA007 U	3.50	3.48	3.51	3.55	3.51	3.51	3.49	3.52	3.49	3.46	3.44	–
SVA007 I		3.54	3.51	3.51	3.52	3.51	3.49	3.52	3.50	3.48	3.44	–
SVA008 U	3.52	3.51	3.51	3.53	3.53	3.51	3.50	3.52	3.49	3.49	3.46	–
SVA008 I		3.49	3.51	3.53	3.53	3.51	3.51	3.52	3.50	3.50	3.47	–
SVA009 U	3.48	3.52	3.52	3.50	3.50	3.52	3.50	3.49	3.48	3.46	3.43	–
SVA009 I		3.50	3.53	3.52	3.51	3.54	3.49	3.51	3.46	3.45	3.42	–

	Room Temperature						
Batch	Initial	1M	2M	3M	6M	9M	12M
SVA007 U	3.50	3.50	3.47	3.46	3.46	3.41	3.38
SVA007 I		3.50	3.46	3.48	3.44	3.40	3.37
SVA008 U	3.52	3.51	3.49	3.47	3.46	3.42	3.37
SVA008 I		3.51	3.49	3.48	3.46	3.43	3.37
SVA009 U	3.48	3.51	3.50	3.47	3.44	3.40	3.37
SVA009 I		3.51	3.50	3.49	3.44	3.40	3.39

DDX7-3

(DDX7-3; DTX-993.1, 13.)

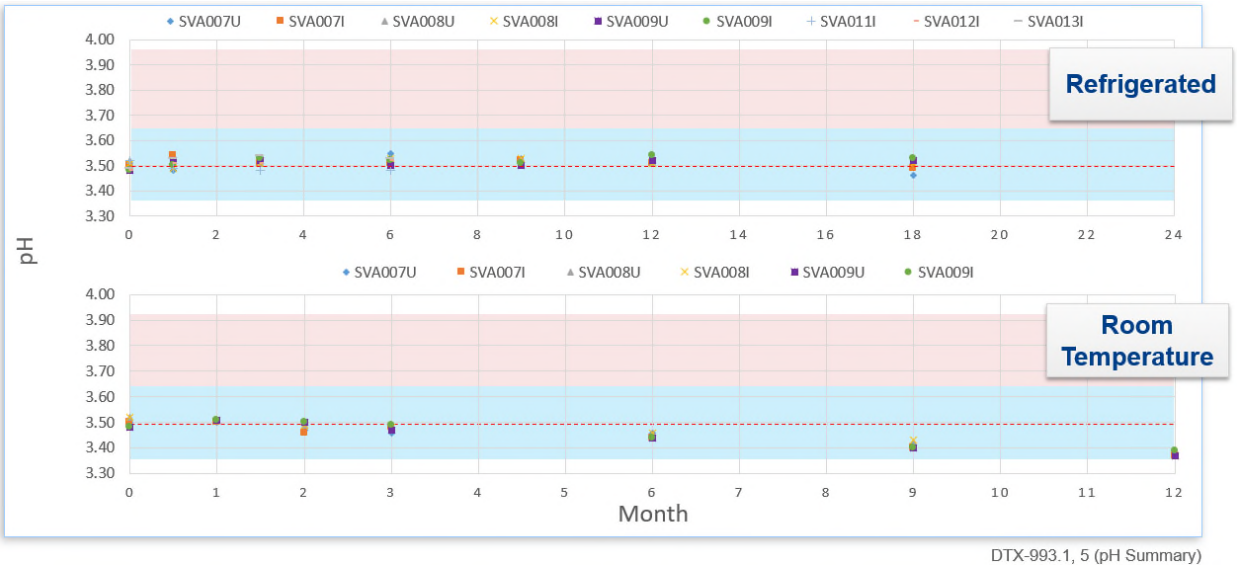
398. Whereas Eagle's un-optimized Registration and Characterization Batches had post-filtration, in-process pHs of 3.6–3.7, every optimized batch has had a post-filtration, in-process pH of 3.44–3.50. (DTX-993.13.)

399. Whereas Eagle's un-optimized Registration and Characterization Batches had release pH measurements of 3.53–3.64, every optimized batch has had a release pH of 3.45–3.57. (DTX-993.13; DDX7-1.)

400. Whereas Eagle's un-optimized Registration and Characterization Batches had refrigerated stability pH measurements of 3.44–3.75, every optimized batch has had refrigerated stability pH measurements within a range of 3.46–3.55. (DTX-993.1; DDX7-1.)

401. Eagle's stability data demonstrate that its optimized manufacturing process has been successful in maintaining the pH of Eagle's ANDA Product close to 3.50 when stored in refrigerated conditions. (*See* DDX7-1; DTX-993; Park Tr. 360:6–13; *see also* DDX2-44 (showing demonstrative plot of data, below).)

402. Eagle's stability data demonstrate that its optimized manufacturing process produces an ANDA Product that exhibits a downward trend (away from the claimed range) when stored in room temperature conditions. (Park Tr. 356:5–12; *see also* DDX2-44 (showing demonstrative plot of data, below).)



DTX-993.1, 5 (pH Summary)

403. Eagle's stability data demonstrates that its optimized manufacturing process has been successful in reducing the variability of the pH of Eagle's ANDA Product under refrigerated storage conditions compared to the Registration and Characterization Batches. (*See* DDX7-1; DTX-993; Park Tr. 361:2–16; *see also* DDX2-19 (showing demonstrative plot of data, below).)

DTX-993.1 (pH Summary)

404. There is a "[m]uch greater" than 50% likelihood that Eagle's ANDA Product will maintain its pH within specification and avoid the claimed pH range over its shelf life. (Park Tr. 386:1–20.)

405. Dr. Kirsch's opinion that at least some vials of Eagle's ANDA Product will more likely than not exhibit the claimed pH is speculative and not supported by the evidence. (*See* FF ¶¶386–404.)

406. Dr. Kirsch did not perform any mathematical calculation to assess the likelihood that Eagle's ANDA Product will go out-of-specification and drift into the claimed pH range. (Kirsch Tr. 319:7–11 ("Q. Did you do a mathematical calculation to figure out what the percentage would be? A. I have done that, but it was in the other part of the case, the Amneal part of the case.").)

407–411. [INTENTIONALLY LEFT BLANK]

D. Par's Drift Theory Improperly Conflates Eagle's Release Specification And Data

412. A necessary assumption required for Dr. Kirsch's infringement theory is that Eagle will not act in full compliance with its representations to the FDA that its stability specification for pH is 3.4 to 3.6. (Kirsch Tr. 298:9–12.) Stated differently, Dr. Kirsch's infringement theory assumes that Eagle will violate its specifications submitted to the FDA. (*Id.*)

413. The 0.1 pH variability exhibited in the release pH measurements for SVA011 was "centered around 3.52." (Kirsch Tr. 289:23–90:2.)

414. The pH measurement of 3.57 for SVA011 at release was the highest measurement "of all of the post-optimization data" available. (Kirsch Tr. 290:8–12.)

415. Dr. Kirsch did not consider the pH stability data for SVA011, but rather focused only on the release data. (Kirsch Tr. 281:15–19.)

416. The pH stability data for SVA011 show that, after the release measurements of 3.57, the pH of SVA011 was reported as 3.49, 3.48, and 3.48 over 6 months of shelf life data, *i.e.*, it went down after release. (DDX7-3; DTX-800.2.)

417. All other release and stability pH data for the PPQ Batches were between 3.45–3.54 over 6 months of shelf life data. (DDX7-3.)

418. It is scientifically inaccurate to take the 0.1 pH variability displayed by SVA011 and "assume that everything is going to be higher than what you see in the data." (Kirsch Tr. 290:19–24.)

419. Whereas SVA001 displayed differences in pH over its shelf life as high as 0.31, after Eagle's optimized manufacturing process was implemented, "[you] don't see any numbers that fluctuate that much in the stability" data. (Kirsch Tr. 295:16–22.)

420. The available data "for batches SVA7 through 13 fluctuate to a degree in the neighborhood of [] .05 and generally located around 3.50, 3.51, 3.52." (Kirsch Tr. 295:18–96:2; Park Tr. 358:11–22; 360:6–13; 361:2–16; 377:21–78:3.)

421. No expert testified that it is scientifically appropriate to take the alleged 0.1 variability in pH and add it to the upper limit of Eagle's release pH specification of 3.64 to predict the behavior of Eagle's ANDA Product. (Park Tr. 473:21–74:20; Kirsch Tr. 290:19–91:2, FF ¶418.)

422. Nevertheless, Par has alleged that Eagle's optimized batches have an upward drift problem by selectively relying on the highest pH measurement available at any point over stability for a particular batch, and taking the difference between such value and the release pH value. (*See* Par's Proposed Findings of Fact Regarding Eagle's Infringement (hereinafter "PFF") at ¶¶112–115.) For example, Par selected the highest pH measurement available on SVA007 (which is pH 3.55, upright, measured at 6 month time point), and compared it to the release value of 3.50, to support its allegation that SVA007 has an upward drift in the range of 0.05 pH unit. (PFF ¶112.) This approach is scientifically unsound, and such cherry-

picking of select pH measurements, in lieu of considering the whole data, cannot establish an upward drift. For example, after measuring the highest pH value of 3.55 at 6 months, the subsequent stability measurements of the upright samples for SVA007 continued to go down in pH, specifically, to 3.51, 3.51, and 3.46 at 9, 12, and 18 months, respectively. (DTX-993.1, 13.) Likewise, SVA007's latest data on the inverted samples also shows that the pH value at 18 month is at 3.49, which is lower than the release pH of 3.50. (DTX-993.1, 13.) In short, when Eagle's data is viewed in whole, there is no indication of an upward drift. (DTX-993.1, 13; Kirsch Tr. 295:18–96:2.) Par's approach of relying on only a few pH measurements out of many (without a scientific justification) distorts Eagle's data and should be rejected.

423. Further, of the optimized batches that have stability data (SVA007–13), the latest pH measurements for these batches are: 3.46 (upright) and 3.49 (inverted) for SVA007 at 18 month; 3.53 (upright) and 3.51 (inverted) for SVA008 at 18 month; 3.52 (upright) and 3.53 (inverted) for SVA009 at 18 month; 3.48 for SVA011 at 6 month; 3.52 for SVA012 at 6 month; and 3.53 for SVA013 at 6 month. (DTX-993.1, 13.) Of the latest measurements, the highest pH value is only 3.53 (SVA009, inverted), and all values are closely centered around 3.50. (DTX-993.1, 13.) Moreover, around half of these measurements (four out of nine) are lower than the release values for these batches (*e.g.*, SVA007 upright (3.50 release vs 3.46 at 18 month), SVA007 inverted (3.50 release vs 3.49 at 18 month), SVA008 inverted (3.52

release vs 3.51 at 18 month), and SVA011 (3.52 release vs 3.48 at 6 month)), which further demonstrates that there is no discernable pattern of an upward drift. (DTX-993.1, 13.)

424. Since Eagle adopted its optimized manufacturing process, Eagle has never manufactured a batch that had an in-process measurement at the highest point of its specification: 3.54. (Kirsch Tr. 291:15–18; DTX-993.13)

425. Since Eagle adopted its optimized manufacturing process, Eagle has never manufactured a batch that has a release measurement at the highest point of its specification: 3.64. (DTX-993.13.)

426. None of the batches manufactured using Eagle's optimized manufacturing process has ever recorded a pH within the claimed range 3.7–3.9. (Park Tr. 358:11–22, 360:6–13; DDX7-1; DTX-993.1, 5, 9.)

427. None of the batches manufactured using Eagle's optimized manufacturing process is expected to have a pH within the claimed range 3.7–3.9 during its shelf life. (Park Tr. 360:6–13, 386:1–20.)

428. None of the batches manufactured using Eagle's optimized manufacturing process has ever recorded a pH at the "upper end" of the release specification 3.4–3.6, such that it would be expected to rise into the claimed pH range during its shelf life according to Dr. Kirsch's "drift" theory. (DDX7-3; DTX-993.13; Park Tr. 455:17–24; Kirsch Tr. 280:14–21 ("Q. All right. So the data that's

available for SVA7 does not indicate that it's going to go anywhere near 3.65; is that correct? A. It's not near 3.65, that's correct. Q. And the same is true for SVA8? A. Yes. Q. And also for SVA9? A. Yes.").)

429. No batch of Eagle's ANDA Product has ever recorded a release pH lower than 3.64 and then drifted into the claimed pH range 3.7–3.9 during its shelf life. (DDX7-3; DTX-993.13; Park Tr. 455:17–24; Kirsch Tr. 280:14–21.)

430. After SVA001, the next highest release pH was for SVA003 at 3.60, yet that batch did not rise into the claimed pH range at any time during its shelf life. (DDX7-2; DTX-993.1, 5, 7.)

431. Par presented no evidence at trial regarding: (1) when during the shelf life the pH is likely to rise into the claimed range; (2) when during the shelf life Eagle is likely to sell its ANDA Product; and (3) whether the former will occur before the latter. (*See* Kirsch Tr. 316:10–320:19.)

432–435. [INTENTIONALLY LEFT BLANK]

E. There Is No Evidence of Direct or Induced Infringement

436. Par has not alleged direct infringement of any claims of the '209 Patent, which require administration of a vasopressin formulation to patients. (*See* D.I. 268, Ex. 2 ¶¶23–26.)

437. Eagle will not "use" its ANDA Product because Eagle will not treat patients. (Park Tr. 383:22–84:6).

438. Eagle will not "make" its ANDA Product with a pH of 3.7–3.9. (Park Tr. 383:22–84:6; *see also* DTX-323.12–13; Park Tr. 373:12–74:2 (noting pH is manufactured to 3.42–3.54).)

439. There is no evidence in the record that Eagle will "sell" or "offer to sell" its ANDA Product with a pH of 3.7–3.9. (Aungst Tr. 182:14–20 (noting AMRI would not release an out-of-specification batch); Kirsch Tr. 251:25–52:4, 253:1–4 (testifying only that Eagle could be authorized to sell a product that infringes at some later point over its shelf life).)

440. A physician's use of Eagle's ANDA Product according to the associated prescribing information will not infringe any Asserted Claim of the '209 patent, because such use will not involve performing the recited method steps using the compositions recited in the claims, *i.e.*, having a pH of 3.7–3.9. (Park Tr. 383:22–84:6; *see* FF ¶¶320–426 (findings supporting that Eagle's product will not possess an infringing pH).)

441. Eagle will not induce infringement of the Asserted Claims of the '209 patent because Eagle will not promote, encourage, or recommend performance of the recited method steps using the compositions recited in the claims, *i.e.*, having a pH of 3.7–3.9. (Park Tr. 383:22–84:6; *see* FF ¶¶320–426 (findings supporting that Eagle's product will not possess an infringing pH).)

442. There is no evidence that Eagle specifically intends physicians to administer a vasopressin composition having a pH of 3.7–3.9. (Park Tr. 383:22–84:6; *see* Kirsch Tr. 209:2–10, 254:17–55:5 (opining for the '785 Patent that Eagle's instruction to use its product, generally, with awareness that some product may have claimed pH is sufficient), 255:22–56:4 (same for '209 Patent), 306:15–07:3 (agreeing Eagle optimized its manufacturing process because it "wanted to control pH.").) Further, Par does not allege that Eagle will encourage practitioners to wait until the pH reaches 3.7–3.9 before administration. (*See* Coralic Tr. 137:18–138:4.)

443. Instead, the evidence demonstrates that Eagle has the specific intent to manufacture a product that does not have a pH of 3.7–3.9 at any point during the proposed shelf life, including at the time of use by its intended users. (Park Tr. 383:22–84:6; *see* DTX-331.9, 24; DTX-727.9, 25; PTX-1433 at 9, 25; Park Tr. 362:11–20.)

444. Eagle's Label informs practitioners that the product has a pH adjusted to 3.4–3.6, and not a pH of 3.7–3.9. (PTX-1417 at EAGLEVAS0060906; Kirsch Tr. 256:14–57:1.)

445. Par does not contend that, if Eagle's ANDA Product is stored at room temperature conditions, it will ever reach the claimed pH range. (Kirsch Tr. 306:11–14.) Rather, to infringe under Dr. Kirsch's theory, a user would need to store Eagle's ANDA Product under refrigerated conditions.

446. The package insert for Eagle's ANDA Product permits storage at both refrigerated and room temperature, and leaves it up to the user to decide how to store the product.

Store between 2°C and 8°C (36°F and 46°F). Do not freeze.

Vials may be held up to 12 months upon removal from refrigeration to room temperature storage conditions (20°C to 25°C [68°F to 77°F], USP Controlled Room Temperature), anytime within the labeled shelf life. Once removed from refrigeration, unopened vial should be marked to indicate the revised 12 month expiration date. If the manufacturer's original expiration date is shorter than the revised expiration date, then the shorter date must be used. Do not use Vasopressin Injection beyond the manufacturer's expiration date stamped on the vial.

Discard vial after 48 hours after first puncture.

The storage conditions and expiration periods are summarized in the following table.

	Unopened Refrigerated 2°C to 8°C (36°F to 46°F)	Unopened Room Temperature 20°C to 25°C (68°F to 77°F) Do not store above 25°C (77°F)	Opened (After First Puncture)
1 mL Vial	Until manufacturer expiration date	12 months or until manufacturer expiration date, whichever is earlier	48 hours

PTX-1417 at EAGLEVAS0060909. Eagle's ANDA Product seeks approval for a shelf life of 24 months at a storage temperature of 2–8°C and allowance for storage at 25°C for a period of 12 months after removal from 2–8°C, not to exceed the original assigned expiry period. (E-SF ¶43.)

F. Eagle's Response to Par's Proposed Findings of Fact

Eagle responds to Par's Proposed Findings of Fact Regarding Eagle's Infringement of the '209 and '785 Patents as follows.

PFF[1] ¶1. Plaintiff Par Pharmaceutical, Inc. ("Par Pharmaceutical") is a corporation organized and existing under the laws of the State of New York, having a principal place of business at 1 Ram Ridge Road, Chestnut Ridge, New York 10977. Par Pharmaceutical develops, manufactures, and markets pharmaceutical products in the United States. D.I. 268, *Par v. Eagle* Pretrial Order *(hereinafter* "PTO"), Ex. 1 ¶ 1.

PFF ¶2. Plaintiff Par Sterile Products, LLC ("Par Sterile Products") is a limited liability company organized and existing under the laws of Delaware, having its principal place of business at 1 Ram Ridge Road, Chestnut Ridge, New York 10977. Par Sterile Products develops, manufactures, and markets injectable pharmaceutical products, and provides manufacturing services to the biopharmaceutical and pharmaceutical industry. PTO Ex. 1 ¶ 2.

PFF ¶3. Plaintiff Endo Par Innovation Company ("EPIC") is a limited liability company organized and existing under the laws of Delaware, having its principal place of business at 1 Ram Ridge Road, Chestnut Ridge, New York 10977. PTO Ex. 1 ¶ 3.

PFF ¶4. Plaintiffs Par Pharmaceutical, Par Sterile Products, and EPIC are referred to collectively as "Par." PTO Ex. 1 ¶ 4.

PFF ¶5. Defendant Eagle ("Eagle") is a corporation organized under the laws of the State of Delaware having a principal place of business at 50 Tice Road, Suite 315, Woodcliff, New Jersey, 07677. Eagle develops and markets pharmaceutical products, including injectable pharmaceutical products, in the United States. PTO Ex. 1 ¶ 5.

PFF ¶6. Non-party Albany Molecular Research Inc. ("AMRI") and its subsidiary OSO were also referred to at trial. AMRI is Eagle's drug product manufacturer who made Eagle's vasopressin batches. *See* PTX-1435, at 4, 20, 25; PTX-1443 (Aungst 2021 Tr.) 20:19-22. AMRI will also be the manufacturer of Eagle's ANDA Product if the United

[1] Par's Proposed Findings of Fact Regarding Eagle's Infringement of the '209 and '785 Patents, recited herein, are based on the copy Par served on Eagle on July 19, 2021, which was the deadline for exchanging of the parties' opening submissions.

States Food and Drug Administration ("FDA") approves Eagle's ANDA. DTDX-1 (Aungst 2019 Tr.) 46:3-46:6. After manufacture, AMRI will transfer the product to Eagle, which will subsequently market and sell Eagle's ANDA Product. DTDX-1 (Aungst 2019 Tr.) 46:7-13.

447. Not disputed.

PFF ¶7. A company seeking to market a new pharmaceutical drug in the United States must first obtain approval from the FDA, typically through the filing of a New Drug Application ("NDA"). *See* 21 U.S.C. § 355(a), (b). The sponsor of the NDA is required to submit to FDA information on all patents claiming the drug that is the subject of the NDA, including any amendments or supplements thereto, or a method of using that drug, and FDA then lists the patent information in its publication, the *Approved Drug Products with Therapeutic Equivalence Evaluations*, which is referred to as the "Orange Book." *See* 21 U.S.C. § 355(b)(1) and (c)(2); 21 C.F.R. 314.53(b)(1).

PFF ¶8. Alternatively, a company seeking to market a generic version of a previously approved drug is not required to submit a full NDA. Instead, it may file an Abbreviated New Drug Application ("ANDA"). *See* 21 U.S.C. §355(j). The generic drug approval process is considered "abbreviated" because the generic manufacturer may piggyback on the innovator company's data and FDA's prior finding of safety and efficacy by demonstrating, among other things, that the generic product is bioequivalent to the previously approved drug (the "listed drug" or "branded drug"). *See* 21 U.S.C. §355(j)(2)(A)(iv); *Eli Lilly & Co v. Medtronic, Inc.*, 496 U.S. 661, 676 (1990).

PFF ¶9. In conjunction with this "abbreviated" application process, Congress has put in place a process for resolving patent disputes relating to generic drugs, pursuant to which an ANDA filer must provide certifications addressing each of the patents listed in the Orange Book for the branded drug. *See* 21 U.S.C. § 355(j)(2)(A)(vii); 21 C.F.R. § 314.94(a)(12). An ANDA filer may certify, for instance, that it believes a patent is invalid or will not be infringed by the manufacture, use, or sale of the generic drug for which the ANDA is submitted (this is referred to as a "Paragraph IV Certification"). *See* 21 U.S.C. § 355(j)(2)(A)(vii)(IV); 21 C.F.R. § 314.94(a)(12)(i)(A)(4).

PFF ¶10. The filer of an ANDA with a Paragraph IV Certification must also provide notice to both the owners of the listed patents and the holder of the NDA for the referenced listed drug. This "Paragraph IV Notice" must include a detailed statement of the factual and legal bases for the applicant's belief that the challenged patent is invalid or not infringed by the proposed generic product. 21 U.S.C. § 355(j)(2)(B); 21 C.F.R. § 314.95.

PFF ¶11. If the patentee or NDA holder files a patent infringement action within 45 days of receiving a Paragraph IV Notice from an ANDA filer, final approval of the ANDA is subject to a 30-month stay. *See* 21 U.S.C. § 355(j)(5)(B)(iii); 21 C.F.R. § 314.107(b)(3). The 30-month stay is important to the innovator companies because it protects them from the harm that could otherwise ensue from the FDA granting approval to an infringing product without first providing an opportunity for the infringement case to be resolved, such that the innovator company is assured of a 30-month period during which it may try to enforce its intellectual property rights and resolve any patent dispute before the generic product enters the market. *See* 21 U.S.C. § 355(j)(5)(B)(iii).

448. Not disputed.

PFF ¶12. Vasopressin is a peptide drug that causes contraction of vascular and other smooth muscle cells. PTO Ex. 1 ¶ ¶ 6.

PFF ¶13. Vasopressin has long been used in critical care situations to treat, among other things, dangerously low blood pressure for patients in septic shock and post-cardiotomy shock. Tr. 125:13-127:14 (Coralic); 493:22-496:1 (Cross).

PFF ¶14. Clinicians do not test the pH[1] of vasopressin products, or other intravenous drug products, prior to administering them to patients. Tr. 137:15- 138:1, 144:13-16, 146:18-147:4 (Coralic). Rather, they administer such products to patients at whatever pH they happen to have at the time they are provided to the clinician for administration to a patient. Tr. 137:15-138:1, 144:13-16, 146:18- 147:4 (Coralic).

[1] pH is a measure of the acidity of a solution and can affect the stability of drug molecules. Tr. 200:15 -202:1 (Kirsch).

449. Not disputed.

PFF ¶15. Clinicians have and will administer vasopressin and other drug products at any time during the approved shelf-life of the drug product as long as it has been stored properly. Tr. 127:20-128:8 (Coralic), 503:21-24 (Cross).

450. Not disputed, except that Par has not adduced any evidence at trial as to when, within Eagle's ANDA Product's shelf-life, the product is likely to be administered. Likewise, Par has not adduced any evidence at trial as to whether there exists a preferred or more frequent timing for using Eagle's ANDA Product within its shelf-life.

PFF ¶16. JHP Pharmaceuticals, LLC ("JHP") sold a vasopressin product under the tradename Pitressin for years prior to 2014.[2] DTX-0038.5; Tr. 390:10-24 (Park). Because vasopressin products were sold prior to adoption of the federal Food, Drug and Cosmetics Act, 21 U.S.C. ch. 9, § 301, *et seq*., JHP was not required to obtain FDA-approval to make and sell Pitressin, and sold it as an unapproved drug product. DTX-0038.5; DTX-0025.9.

[2] On February 20, 2014, Par Pharmaceutical Companies, Inc. acquired JHP, and then on February 26, 2014, JHP changed its name to Par Sterile Products, LLC. PTO Ex. 1 ¶ 8.

451. Not disputed

PFF ¶17. On September 25, 2012, JHP Pharmaceuticals, LLC submitted NDA No. 204485 under Section 505(b)(2) of the Federal Food, Drug, and Cosmetic Act, seeking approval from the FDA for a vasopressin injection product to increase blood pressure in adults with vasodilatory shock. PTO Ex. 1 ¶ 7.

PFF ¶18. On April 17, 2014, FDA approved NDA No. 204485. The trade name for the approved vasopressin product was VASOSTRICT®. PTO Ex. 1 ¶ ¶ 9.

452. Not disputed.

PFF ¶19. The Vasostrict product as originally approved in April 2014 had a shelf-life of 12 months at room temperature storage. PTO Ex. 1 ¶ 10. Par never sold Vasostrict with the April 2014 Vasostrict Label that was approved at that time—i.e., with the 12 month room temperature shelf-life. *See* Tr. 719:2-7 (Kannan), 814:6-25 (Kirsch).

PFF ¶20. Par filed a supplement to its NDA (204485/S-001) seeking approval for storage between 2°C and 8°C and change in shelf-life expiration—to 24 months at refrigerated storage; FDA approved that supplement (NDA 204485/S-001) on September 18, 2014. PTO Ex. 1¶11. Vasostrict was first sold and offered for sale in November 2014, with the approved September 2014 label. PTO Ex. 1 ¶¶ 12, 16.

PFF ¶21. Par subsequently filed a second supplement to its NDA (204485/S-002) seeking approval for room temperature storage for up to 12 months following removal from storage at refrigerated conditions; FDA approved that supplement (NDA 204485/S-002) on May 7, 2015. PTO Ex. 1 ¶ 13.

PFF ¶22. Throughout the trial, the parties referred to the formulation as described in NDA 204485, and the supplements approved on April 17, 2014, September 18, 2014, and May 7, 2015 as "Original Vasostrict." PTO Ex. 1 ¶ 14.

PFF ¶23. As just described, there were three separate labels approved for Original Vasostrict, but Par only sold products under the latter two labels, both of which instructed refrigerated storage of the product. *See* above; *see also* Tr. 719:2-7 (Kannan), 814:6-25 (Kirsch); DTX-46.4; DTX-132.5.

453. Not disputed. But further, although there were three different versions of FDA-approved labels for Original Vasostrict that included different storage conditions and shelf lives (April 17, 2014, September 18, 2014, and May 7, 2015

labels), these labels were otherwise identical in all material respects, including with respect to their methods of use and the description of the formulation of Original Vasostrict. (*Compare, e.g.*, DTX-30.4 at § 1–3, 9 at §11 *with* DTX-132.4 at § 1–3, 5 at §11.)

> **PFF ¶24**. Original Vasostrict was indicated to increase blood pressure in adults with vasodilatory shock (e.g., post-cardiotomy or sepsis) who remain hypotensive despite fluids and catecholamines. PTO Ex. 1 ¶ 15.

454. Not disputed.

> **PFF ¶25**. In accordance with the instructions on its label, Vasostrict is typically stored in a refrigerator under refrigerated conditions. Tr. 128:9-19 (Coralic), 503:25-504:2 (Cross). Hospital pharmacists will usually keep vasopressin refrigerated until it needs to be pulled from refrigeration for distribution throughout the hospital and administration to the patient. Tr. 128:9-19 (Coralic). This reflects a change from the prior use of vasopressin products, which were stored at room temperature. Tr. 142:23-143:9 (Coralic).

455. Disputed. According to Vasostrict's label, it may be stored refrigerated, at room temperature, or both. (*See, e.g.*, DTX-132.5 at § 16.) Par presented no survey data or informed testimony establishing the frequency with which Vasostrict is stored under refrigeration as compared to at room temperature. Consistently, the testimony by Dr. Coralic that Par relies on states that Vasostrict is "either store[d] [] in the refrigerator or place[d] at room temperature, depending on which part of the hospital the drug is being delivered to." (Coralic Tr. 128:12–22.)

> **PFF ¶26**. After Vasostrict was originally approved with a 12-month room temperature shelf-life, in addition to seeking a longer shelf-life under refrigerated conditions, Par also undertook a project to reformulate Vasostrict to obtain a more stable product that could support a longer room temperature shelf-life. *See, e.g.*, DTDX-2 (Kannan 2019 Tr.) 54:8-54:20, 70:14-71:2, 156:15-157:5; DTDX-8 (Vandse 2020 Tr.) 181:12-182:12; Tr. 714:10-23 (Kannan). Through their research efforts, the Par inventors determined that the pH 3.7-3.9 range achieved stability advantages that were unexpected in view of the prior art. *See, e.g.*, DTDX-4 (Kenney 2020 Tr.) 214:19-22, 215:9-15, 215:18-216:11; DTX-1115.14; DTDX-8 (Vandse 2020 Tr.) 181:12-182:12, 182:18-182:23, 183:7-14, 185:21-25, 186:2-188:6; DTDX-10 (Sanghvi 2020 Tr.) 115:25-116:1, 116:4-5, 116:10-16; DTDX-7 (Vandse 2019 Tr.) 152:20-153:15; DTDX-3 (Kenney 2019 Tr.) 218:23-219:8, 219:10, 219:12; DTDX-9 (Sanghvi 2019 Tr.) 152:10-18; Tr. 827:11-14 (Kirsch).

456. Disputed. Par's reformulation project considered only the pH at which the formulation was manufactured, and resulted in reformulated product ("Reformulated Vasostrict") with a manufacturing pH of 3.8, not 3.7 or 3.9. (DTX-65.57; DTX-151.4 at § 11; PTX-252 at PAR-VASO_0030568.) Further, the FDA-approved release specification for Reformulated Vasostrict is 3.6 to 4.0, and the stability specification is 2.5 to 4.5, such that the product need not have a pH within 3.7–3.9 at any time during its shelf life. (Chyall Tr. 609:5–20; DTX-72.1.) There is no evidence that Reformulated Vasostrict has any stability benefit as compared to Original Vasostrict—their FDA-approved shelf lives and impurity specifications are identical. (FF¶¶185–86.) And although Par and its experts have contended that data show that Reformulated Vasostrict could have a longer room temperature shelf life, no such data were presented at trial, and Par has not sought or obtained such a longer

room temperature shelf life for Reformulated Vasostrict. (*Id*.) Eagle also disputes that "the Par inventors determined that the pH 3.7-3.9 range achieved stability advantages that were unexpected in view of the prior art" for the reasons stated above.

> **PFF ¶27**. Based on that work, Par Sterile Products filed a further supplement to its NDA (204485/S-003) seeking approval for a new 1 mL formulation of Vasostrict. Changes to the formulation of Vasostrict in this supplement included addition of a sodium acetate buffer and a change in pH—from 3.4 to 3.6 in Original Vasostrict to 3.8 in Reformulated Vasostrict. On March 18, 2016, FDA approved NDA 204485/S-003. PTO Ex. 1 ¶ 17.

457. Disputed. The pH laboratory studies conducted by the named inventors were done in support of prosecution of Par's patents to try to convince the Examiner that at least three different pH ranges were "critical," not in support of the reformulation of Vasostrict. (FF¶¶188–89, 211.) Eagle further notes that the release and stability pH specifications for Original and Reformulated Vasostrict overlap. Specifically, the release and stability specifications for Original Vasostrict were pH 3.3–4.0 and 2.5–4.5, respectively, (FF¶¶89–90), and the release and stability specifications for Reformulated Vasostrict are pH 3.6–4.0 and 2.5–4.5, respectively. (FF¶¶187.) Therefore, notwithstanding Par's claim that there has been a "change in pH—from 3.4 to 3.6 in Original Vasostrict to 3.8 in Reformulated Vasostrict," the release and stability specifications for these products overlap in pH.

PFF ¶28. The data obtained by Par for Reformulated Vasostrict showed improvements as compared to Original Vasostrict, in terms of both higher vasopressin assay values and lower impurity levels. *See, e.g.*, DTDX-3 (Kenney 2019 Tr.) 89:8-13, 16-18, 20-21; DTDX-4 (Kenney 2020 Tr.) 217:3-17,19-21, 219:19-24, 220:20-221:7; DTDX-7 (Vandse 2019 Tr.) 152:20-153:15, 251:22- 252:6; DTDX-8 (Vandse 2020 Tr.) 181:12-182:12; Tr. 797:12-799:19 (Kirsch).

PFF ¶29. Moreover, Par obtained data sufficient to support an 18-month room temperature shelf-life for Reformulated Vasostrict, which was longer than the shelf-life that could be supported for Original Vasostrict. *See, e.g.*, DTDX-2 (Kannan 2019 Tr.) 235:18-22, 235:24-236:5, 297:9-298:5, 298:8-298:13; DTDX-3 (Kenney 2019 Tr.) 87:15-88:5; DTDX-4 (Kenney 2020 Tr.) 154:14-15, 154:17-25, 217:3-17, 217:19-21, 219:19-24, 220:20-221:7; DTDX-8 (Vandse 2020 Tr.) 181:12-182:12; Tr. 799:20-800:1, 888:5-17 (Kirsch); DTX-53.0016; PTX-252 at PAR-VASO_0030582.

458. Disputed.[2] In Par's internal study comparing the stability of Original and Reformulated Vasostrict, Par stated that although "[t]he degradation rate of vasopressin in [Reformulated Vasostrict] is less than half of that of [Original Vasostrict], . . . due to assay methods variability and USP standards variability between standard vials ***it cannot be concluded this improvement is representative of the true kinetics of the peptide***." (DTX-1115.20.) Therefore, Par "proposed that

[2] Par has indicated that it will object to Eagle's reliance on the impurities for Lot 788435 on the basis that the evidence was addressed during the cross-examination of its expert, Dr. Kirsch, as opposed to during a direct examination of Defendants' witness. To the extent Par's objection is sustained, Eagle likewise objects to PFF ¶29, on the basis that, Par cites to no testimony where any witness cited to DTX-53.0016 or PTX-252 at PAR-VASO_0030582 to explain how these documents support the contention that "obtained data sufficient to support an 18-month room temperature shelf-life for Reformulated Vasostrict."

[Reformulated Vasostrict] is assigned the same storage and expiry conditions as [Original Vasostrict]." (DTX-1115.60.) Although Par and its experts have contended that data show that Reformulated Vasostrict could have a longer room temperature shelf life, no such data were presented at trial, and Par has not sought or obtained such a longer room temperature shelf life for Reformulated Vasostrict. (FF¶185.) Eagle further incorporates by reference FF¶¶172–87, responding to Par's comparisons of Reformulated and Original Vasostrict. (FF¶¶172–187.)

> **PFF ¶30**. Par Sterile Products also filed an additional supplement to its NDA (204485/S-004) seeking approval for a 10 mL multi-dose formulation of Vasostrict with the same concentration of vasopressin as the 1 mL formulation (i.e., 20 units of vasopressin/mL). On December 17, 2016, FDA approved NDA 204485/S-004. PTO Ex. 1 ¶ 18.
>
> **PFF ¶31**. The parties refer to the current formulation of Vasostrict—approved on March 18, 2016 and December 17, 2016—as "Reformulated Vasostrict." PTO Ex. 1 ¶ 19.
>
> **PFF ¶32**. The approved label for Reformulated Vasostrict discloses that it "is a sterile, aqueous solution of synthetic arginine vasopressin for intravenous administration. The 1 mL solution contains vasopressin 20 units/mL, Water for Injection, USP and, sodium acetate buffer adjusted to a pH of 3.8." PTO Ex. 1 ¶ 20.
>
> **PFF ¶33**. Par first sold Reformulated Vasostrict in September 2016. PTO Ex. 1 ¶ 22
>
> **PFF ¶34**. Par Sterile Products is the holder of NDA No. 204485 for Vasostrict, including all supplements thereto. PTO Ex. 1 ¶ 24.
>
> 459. Not disputed.

PFF ¶35. Par obtained patents[3] based on the above-described research and development work it performed in connection with the development of Reformulated Vasostrict, including: (1) U.S. Patent No. 9,750,785 (the “”785 Patent”), and (2) U.S. Patent No. 9,744,209 (the “”209 Patent”) (collectively the “Asserted Patents”). JTX-002 (‘209 patent); JTX-003 (‘785 patent); Tr. 766:18-767:4, 775:16-776:10, 837:2-23, 838:21-840:10 (Kirsch).

[3] Par Pharmaceutical is the assignee and owner of the ’209 and ’785 patents. EPIC is the exclusive licensee of the ’209 and ’785 patents. PTO Ex. 1 ¶ 31.

PFF ¶36. The parties agree that the effective filing date of the ’209 and ’785 patents is February 7, 2017. PTO Ex. 1 ¶ 27, 29.

PFF ¶37. Par asserts claims 1, 5 and 8 of the ’785 Patent, each of which is directed to specified vasopressin compositions. JTX-003.

PFF ¶38. In particular, the Asserted Claims of the ’785 patent recite the following:

> **Claim 1:** A pharmaceutical composition comprising, in a unit dosage form, from about 0.01 mg/mL to about 0.07 mg/mL of vasopressin or a pharmaceutically-acceptable salt thereof, wherein the unit dosage form further comprises impurities that are present in an amount of 0.9% to 1.7%, wherein the impurities have from about 85% to about 100% sequence homology to SEQ ID NO.: 1, and wherein the unit dosage form has a pH of 3.7-3.9.
>
> **Claim 5:** The pharmaceutical composition of claim 1, wherein the impurities comprise SEQ ID NO.: 4, and SEQ ID NO.: 4 is present in the unit dosage form in an amount of 0.2% to 0.4%.
>
> **Claim 8:** The pharmaceutical composition of claim 1, wherein the impurities comprise SEQ ID NO.: 2 and SEQ ID NO.: 4, and SEQ ID NO.: 2 is present in the unit dosage from in an amount of 0.1% to 0.3% and SEQ ID NO.: 4 is present in the unit dosage from in an amount of 0.2% to 0.4%.
>
> JTX-003.

PFF ¶39. Par asserts claims 1, 4, 5 and 7 of the '209 Patent, each of which is directed to methods of treatment using specified vasopressin compositions. JTX- 002.

PFF ¶40. In particular, the Asserted Claims of the '209 patent recite the following:

> **Claim 1:** A method of increasing blood pressure in a human in need thereof, the method comprising administering to the human a unit dosage form, wherein the unit dosage form comprises from about 0.01 mg/mL to about 0.07 mg/mL of vasopressin or a pharmaceutically acceptable salt thereof, wherein:
>
> the unit dosage form has a pH of 3.7-3.9; the unit dosage form further comprises impurities that are present in an amount of 0.9% - 1.7%, wherein the impurities have from about 85% to about 100% sequence homology to SEQ ID NO.: 1;
>
> the administration provides to the human from about 0.01 units of vasopressin or the pharmaceutically-acceptable salt thereof per minute to about 0.1 units of vasopressin or the pharmaceutically- acceptable salt thereof per minute; and
>
> the human is hypotensive.
>
> **Claim 4:** The method of claim 1, wherein the impurities comprise SEQ ID NO.: 4, and SEQ ID NO.: 4 is present in the unit dosage form in an amount of 0.2% to 0.4%.
>
> **Claim 5:** The method of claim 1, wherein the impurities comprise SEQ ID NO.: 7, and SEQ ID NO.: 7 is present in the unit dosage form in an amount of 0.3% to 0.6%.
>
> **Claim 7:** The method of claim 1, wherein the impurities comprise SEQ ID NO.: 2 and SEQ ID NO.: 4, and SEQ ID NO.: 2 is present in the unit dosage form in an amount of 0.1% to 0.3% and SEQ ID NO.: 4 is present in the unit dosage form in an amount of 0.2% to 0.4%.
>
> JTX-002.

460. Not disputed, except that Eagle disputes that the Asserted Patents were obtained by Par "based on the above-described research and development work it performed in connection with the development of Reformulated Vasostrict." Rather, as discussed in Defendants' Proposed Findings of Fact ¶¶241–318, incorporated herein by reference, the Asserted Patents were obtained through inequitable conduct committed by the applicants during prosecution, including the submission of three false declarations by inventor Kannan and prosecuting attorney Kenesky during prosecution of the parent '239 patent and related '478 patent.

PFF ¶41. The parties stipulated that the claim term "vasopressin" should be construed to mean "arginine vasopressin as described in SEQ. ID. NO. 1 *(see, e.g.*, '239 patent, cols. 25-26)" with respect to each of the Asserted Patents. D.I. 61 at 12; *see also* PTO Ex. 1 ¶ 54.

PFF ¶42. The Court ordered that the '209 patent claim term "administering to the human a unit dosage form" be given its "[p]lain and ordinary meaning; no construction necessary." D.I. 71.

PFF ¶43. No other claim term of the Asserted Patents was construed by the Court in Par's case against Eagle. PTO Ex. 1 ¶ 55.

461. Not disputed.

PFF ¶44. The parties' respective experts (Drs. Kirsch and Park) provided competing proposals concerning the definition of a person of ordinary skill in the art to which the Asserted Patents are directed ("POSA") that they acknowledge are very similar. *See*, *e.g.*, Tr. 211:14-21 (Dr. Kirsch testifying that using Defendants' definition of POSA would not affect his opinions), 388:14-20 (Dr. Park testifying that his and Dr. Kirsch's definitions are "not that different"). Their respective proposals are as follows:

Par's Proposal: A POSA would have a Master's, Pharm.D., or Ph.D. in the field of pharmaceutical sciences or a related discipline and several years of experience in the development of pharmaceutical dosage forms. A person of ordinary skill in the art may also have less formal education and a greater among of experience. Further, a POSA would have had access to and would have worked in collaboration with persons who have several years of experience in the formulation of drug products as well as other professionals in the drug development field, such as pharmacologists, chemists, biologists, or clinicians. Tr. 210:17- 211:9 (Dr. Kirsch's definition);

Defendants' Proposal: A person of ordinary skill in the art is someone who has a master's degree, or a PhD degree in pharmaceutical sciences or related skill with several years of experience in development pharmaceutical dosage forms, including stable aqueous peptide formulations and more experience may substitute for lower level of education and vice-versa. Also, a person can have access to and collaboration with persons having drug formulation experience, as well as pharmacologists, chemists, biologists or clinicians. Basically, can work as a team. Tr. 387:24-388:13 (Dr. Park's definition).

PFF ¶45. Both side's experts testified that their opinions would not change if the Court were to adopt the other side's definition. Tr. 388:14-20 (Park); 211:14-21, 827:15-828:1 (Kirsch). Therefore, the Court need not make an express finding as to which party's definition of a POSA it will use.

462. Not disputed

PFF ¶46. On January 25, 2018, Eagle submitted ANDA No. 211538 ("Eagle's ANDA") pursuant to 35 U.S.C. § 355(j), seeking approval to engage in the commercial manufacture, use, and sale of a proposed generic vasopressin product, Vasopressin Injection USP, 20 units/1 mL ("Eagle's ANDA Product"), identifying Vasostrict as the reference listed drug. PTO Ex. 1 ¶ ¶ 39; *see* DTX- 0133.001.

463. Not disputed, except Eagle clarifies that its ANDA seeks approval for a generic version of Original, not Reformulated, Vasostrict. (FF¶¶319–320.)

PFF ¶47. Eagle's ANDA includes Paragraph IV certifications to the Asserted Patents, certifying that Eagle believes the Asserted Patents are invalid or will not be infringed by the commercial manufacture, use, or sale of Eagle's ANDA Product. PTO Ex. 1 ¶ 41.

PFF ¶48. While "Eagle specifie[d] the original version of Vasostrict®, approved April 17, 2014, as the RLD" per a waiver under 21 C.F.R. § 314.99(b) (DTX-131.1; Tr. 346:19-347:2, 348:3-18 (Park)), Eagle conducted comparative studies of its product against Reformulated Vasostrict to support approval of its ANDA. *See, e.g*, DTX-133.0034, 0036; Tr. 478:20-481:10 (Park).

PFF ¶49. Pursuant to its ANDA, Eagle is seeking FDA approval to make, use, and sell its ANDA Product before expiration of the Asserted Patents. PTO Ex. 1 ¶ 40.

PFF ¶50. If approved, Eagle's ANDA Product would, when sold, be packaged together with a package insert (also commonly referred to as the "label"), the current proposed draft of which is PTX-1417, along with carton labeling (PTX-1419) and vial labeling (PTX-1420). PTO, Ex. 1 ¶ 52; Tr. 129:5-19, 133:15-134:2 (Coralic).

464. Not disputed.

PFF ¶51. Eagle's package insert/label describes that the product "is adjusted with acetic acid to pH 3.4-3.6." PTX-1417, at EAGLEVAS0060906. The "adjusted ... to" language refers to adjustments made by the manufacturer during the manufacturing process (i.e., prior to its release for sale). *See* Tr. 64:4-65:2 (colloquy); 255:25-257:5 (Kirsch).

465. Disputed. The pH description in Eagle's package insert, as identified by Par—*i.e.*, "is adjusted with acetic acid to pH 3.4-3.6"—is adopted from the same description provided in the label for Original Vasostrict, which Eagle's Label copies.

(FF¶328; *compare* PTX-1417 at EAGLEVAS0060906, §11 *with* DTX-151.4 at §11.) In fact, under Eagle's optimized manufacturing process, Eagle's adjusts the pH of its vasopressin batches to the narrower pH range of 3.42–3.49, and those batches must meet final in-process pH specifications of 3.42–3.54. (FF¶¶362, 372.)

> **PFF ¶52**. Eagle's ANDA Product seeks the same shelf-life and storage conditions as Vasostrict. Tr. 134:13-18 (Coralic); PTX-1422 at EAGLEVAS0061162-63.

466. Not disputed.

> **PFF ¶53**. If approved by FDA, Eagle's ANDA Products, like other drug products, could be administered any time during their approved shelf-life. Tr. 127:20-128:8 (Coralic), 503:21-24 (Cross).

467. Not disputed, except that Par has not adduced any evidence at trial as to when, within Eagle's ANDA Product's shelf-life, the product is most likely to be administered. Likewise, Par has not adduced any evidence at trial as to whether there exists a preferred or more frequent timing for using Eagle's ANDA Product within its shelf-life.

> **PFF ¶54**. Eagle, through its joint venture partner AMRI, has manufactured a total 17 batches of Eagle's ANDA Product (SVA001-017). PTO Ex. 1 ¶ 44; PTX-1443 (Aungst 2021 Tr.) 20:19-22. Batches 10 and 15 were rejected for reasons unrelated to any disputed issues in the case, and therefore no pH data or stability data on those batches was presented at trial. Tr. 354:4-354:16 (Park); *see generally* DTX-993; DDX7-1.

468. Not disputed.

PFF ¶55. Batches SVA001-003 are referred to as the "registration batches." See, e.g., PTX-1435, at 4. Registration batches (sometimes also referred to as exhibit batches) are batches manufactured to evaluate the stability of the product and its attributes in comparison to the RLD and are used to generate data contained in the ANDA. DTDX-1, (Aungst 2019 Dep. Tr.) 85:21-86:5; Tr. 220:14-23 (Kirsch); 351:6-17 (Park).

PFF ¶56. Eagle has completed its stability protocol for its registration batches and has reported 24-month pH data to the FDA for those batches. See, e.g., PTX-1435, at 9; DTX-993.001.

469. Not disputed

PFF ¶57. As discussed in more detail below, data generated on Eagle's registration batches revealed that the pH of the product would drift upward over time while stored in refrigerated conditions. PTX-1435, 9-10.

470. Disputed. The assessment of the pH stability data revealed that the pH of the Registration Batches alone "slightly increase[ed] over 24 months for the 2-8°C storage condition. The increase over 12 months was only 0.024 pH units." (PTX-1435 at 9). This, along with the out-of-specification test result for Registration Batch SVA001 served as the basis to revise "the manufacturing in-process controls . . . to assure tighter control of pH[.]" (*Id.*) The analysis did not conclude "that the pH of the product ***would drift upward*** over time when stored in refrigerated conditions." (PFF ¶57) (emphasis added).

PFF ¶58. Eagle and AMRI manufactured three additional batches, which it calls "characterization batches," in accordance with the manufacturing process used for the registration batches. PTO Ex. 1 ¶¶ 46-47; DTX-331.0020.

PFF ¶59. Eagle made them in order to generate stability data under "worst-case RLD label storage of 12 months 2-8°C plus 12 months 25°C/60%RH," and "to provide product samples at or near release for proper characterization of the drug product." PTX-1435, at 20.

PFF ¶60. Eagle has completed its stability protocol for its characterization batches and has reported 24-month pH data to the FDA for those batches. *See, e.g,* PTX-1435, at 23; DTX-993.001.

PFF ¶61. Eagle and AMRI thereafter made an additional three "optimization/confirmation batches." PTO Ex. 1 ¶ 48.

PFF ¶62. As discussed in more detail below, Eagle manufactured its optimization/confirmation batches in order to test changes to the manufacturing process and in-process specifications that Eagle made in response to out-of-specification data obtained on the registration batches. PTX-1435, at 25; Tr. 352:21-353:2 (Park).

PFF ¶63. Eagle has not completed its stability protocol for its optimization/confirmation batches and has reported only 18-month pH data to the FDA for those batches. *See, e.g,* PTX-1435, at 27; DTX-993.001; Tr. 359:21-23 (Park).

PFF ¶64. Eagle and AMRI subsequently manufactured batches SVA011-13 in November and December of 2020, which are referred to as "PPQ" batches because they were used in process performance qualification studies that are described in more detail below. Tr. 353:3-5 (Park); PTX-1443 (Aungst 2021 Tr.) 21:01-21:10. Eagle and AMRI manufactured the PPQ batches in accordance with Eagle's currently-proposed commercial manufacturing process. Tr. 353:3-14 (Park); PTX-1443 (Aungst 2021 Tr.) 21:08-10; 21:12-18.

PFF ¶65. The PPQ batches have six-months of stability pH testing data available. DDX7-1; DTX-993; Tr. 359:24-360:1 (Park).

PFF ¶66. Eagle has not submitted any pH data from the PPQ batches to FDA. Tr. 240:1-5 (Kirsch); *see,* PTX-1435 (reporting on data for only batches SVA001- 009).

PFF ¶67. After manufacturing the PPQ batches, Eagle and AMRI manufactured batches SVA014, 016, 017 in accordance with Eagle's currently-proposed commercial manufacturing process. Tr. 351:6-

353:14 (Dr. Park noting that batches SVA007 and up are representative of the pH of Eagle's commercial product).

PFF ¶68. Batches SVA014, 016, and 017, were not placed in a stability protocol. Tr. 354:4-7 (Park). Accordingly, no pH data after release was presented for these batches at trial. *Id:, see* DTX-993; DDX7-1.

PFF ¶69. Eagle has not submitted any pH data from batches SVA014, 016, or 017 (or any batches after SVA009) to FDA. Tr. 240:1-5 (Kirsch); *see,* PTX-1435 (reporting on data for only batches SVA001-009).

PFF ¶70. As described herein, Eagle conducts pH testing at various stages during the life of a batch including: (1) during compounding, (2) during in-process testing, (3) during release testing, and (4) during stability testing for batches subject to a stability protocol, and Eagle additionally conducted non-routine testing on batches SVA011-013 per its Process Performance Qualification ("PPQ") Protocol.

471. Not disputed.

PFF ¶71. When Eagle tests and reports the pH of its product after the bulk solution has been filled into individual vials (i.e., for the final in-process testing, release testing, and stability testing), each pH test is conducted on a pooled sample of five vials. Tr. 217:3-23 (Kirsch); 370:15-371:2, 381:22-382:13 (Park). Moreover, when Eagle reports pH measurements, it rounds the measured values to the level of precision set forth in the specification. *See* Tr. 225:22-226:21 (Kirsch); PTX-1435, at 9 ("The pH results of 3.35 and 3.64 represent the lower and upper bounds of the pH specification of 3.4 to 3.6."); PTX-1443 (Aungst 2021 Tr.) 47:25-49:08. The use of rounding to report pH measurements is common practice to POSAs. Tr. 209:22-210:16 (Kirsch).

472. Not disputed. Further, Par's formulation expert, Dr. Kirsch, testified that pooling of vials for testing pH is a "standard procedure in the industry." (Kirsch Tr. 267:25–68:13.)

PFF ¶72. Eagle tests the pH of its batches during a part of the manufacturing process called "compounding," which is the process of combining, mixing, or altering ingredients to create a medication. Tr. 362:21-363:2 (Park); D.I. 276, at 3; D.I. 277, at 1.

473. Not disputed.

PFF ¶73. Eagle set forth the compounding steps for its registration batches and characterization batches[4], including the pH adjustment and measurement steps, in Figure 1 of DTX-323. DTX-323.0005.

[4] The same compounding process was used for Eagle's characterization batches. (PTO Ex. 1 ¶ 47.)

474. Not disputed, but Eagle clarifies that, while Figure 1 of DTX-323 provides an abbreviated illustration of the compounding steps, the figure does not fully describe the compound steps for Eagle's Registration Batches and Characterization Batches.

PFF ¶74. After manufacturing the registration and characterization batches, Eagle and AMRI "slightly modified" their manufacturing process for the optimization/confirmation batches, as well as proposed commercial batches. DTDX-1 (Aungst 2019 Tr.) 81:20-24; 86:21-87:11. These manufacturing changes were aimed at achieving "some slight changes in terms of the pH within the overall product at the time of release." DTDX-1, (Aungst 2019 Tr.) 86:21-87:11; *see also* PTX-1435, at 9. Eagle's "optimized" manufacturing process is set forth in Figure 4 of DTX-323. DTX-323.0016.

475. Disputed to the extent that Par is interpreting Dr. Aungst's use of the terms "slightly" and "slight" as suggesting that Eagle's manufacturing changes have been insignificant or have not resulted in a material change to the pH of Eagle's ANDA Product. As described above, Eagle made significant changes to its

manufacturing process, including narrowing its compounding and in-process pH specifications and adding a stabilization step, that have had a significant impact on the pH control of the manufacturing process. (FF¶¶361–374.) In addition, while Figure 4 of DTX-323 cited by Par provides an abbreviated, graphical representation of Eagle's modified manufacturing process, the full manufacturing process is described in the batch records, including in the Proposed Commercial Batch Record. (DTX-324.)

> **PFF ¶75**. In-process specifications are, in-part, designed to assure that the final product will meet its quality requirements, and are intended to be consistent with the drug product's final specifications. *See* D.I. 276, at 2-3.

476. Disputed, to the extent Par intends to suggest that in-process specifications, including those in Eagle's optimized manufacturing process, are intended to be ***coextensive*** with a drug product's final release and stability specifications. As discussed above, the in-process specifications for Eagle's optimized manufacturing process are significantly narrower than the final release and stability specifications, and are designed to yield product at or close to the middle of the release and stability specifications, *i.e.*, 3.50. (FF¶¶361–374.)

> **PFF ¶76**. Eagle's in-process pH tests refer to a pH measurement of the bulk solution prior to microbial filtration (e.g., the "pre-filtration" test results) and a pH measurement conducted on a pooled sample of 5 vials selected from the first 300 vials filled after filtration to remove microbial contamination (e.g., the "post-filtration" test results). *See, e.g.*, Tr. 242:16-243:15 (Kirsch).

477. Not disputed, but Eagle clarifies that, in addition to pre-filtration and post-filtration test results, Eagle additionally measures pH during other parts of its optimized manufacturing process, including during the pH adjustment and pH stabilization steps. (FF¶¶361–368.)

> **PFF ¶77**. Eagle's in-process pH specifications fluctuated between its registration batches, process optimization/confirmation batches, and intended commercial batches as shown in Table 3 of DTX-323:
>
> **[**Table 3 omitted**]**

478. Disputed. The pH specifications did not "fluctuate[]," but were rather "optimized or added as a result of the execution of the process optimization/confirmation batches." (DTX-323.12).

> **PFF ¶78**. As can be seen in Table 3, Eagle broadened the upper limit of its in process pH specification, from 3.50 to 3.54, after manufacturing the optimization/confirmation batches (SVA007-009). *Id.*; *see* Tr. 468:24-470:23 (Park).

479. Disputed. The in-process specification of 3.42–3.54 was the operative specification for Optimization/Confirmation Batch SVA009 (as well as for the subsequent batches SVA010–17). (DTX-334.679.)

> **PFF ¶79**. None of Eagle's optimization/confirmation batches or subsequent batches have been manufactured at the upper limit (i.e. 3.54) of Eagle's current in-process, post-filtration, pH specification. *See, e.g.*, DTX-993.0013; DDX7-1.

480. Not disputed.[3]

PFF ¶80. Release specifications are "[t]he combination of physical, chemical biological, and microbiological tests and acceptance criteria that determine the suitability of a drug product at the time of its release." D.I. 276, at 2; *see* Tr. 349:13-15 (Park). "For each batch of drug product, there shall be appropriate laboratory determination of satisfactory conformance to final specifications for the drug product . . . prior to release" and products that fail to meet the release specifications "shall be rejected." 21 C.F.R. 211.165(a), (f). The converse is also true—drug products meeting those specifications may be released for commercial sale. *Id.*, *see* D.I. 277; Tr. 219:13-16 (Kirsch); Tr. 412:15-23 (Park). The release pH test is conducted once the filling operation is complete. Tr. 219:8-12 (Kirsch).

481. Disputed as not supported by the trial record. Par did not present any witness at trial qualified to testify regarding FDA regulations, and Drs. Kirsch and Park were not proffered as experts on FDA regulations. (Colloquy Tr. 32:10–33:25, 196:20–24, 230:5–31:25.) Further, Par provides no support for the proposition that drug products that meet the release specifications "may be released for commercial sale" under all circumstances. Both release and stability specifications are part of

[3] Par has indicated that it will object to Eagle's reliance on the impurities for Lot 788435 on the basis that the evidence was addressed during the cross-examination of its expert, Dr. Kirsch, as opposed to during a direct examination of Defendants' witness. To the extent Par's objection is sustained, Eagle likewise objects to PFF ¶79 on the basis that Par cites to no testimony where any witness testified that "[n]one of Eagle's optimization/confirmation batches or subsequent batches have been manufactured at the upper limit (i.e. 3.54) of Eagle's current in-process, post-filtration, pH specification" at trial, including by reference to DTX-993.0013 and DDX7-1.

Eagle's ANDA submitted to the FDA for which Eagle seeks FDA-approval. (DTX-327.1; DTX-678.2; PTX-1427 at EAGLEVAS0061371.)

> **PFF ¶81**. The release pH specification in Eagle's ANDA has remained constant at 3.4-3.6 since Eagle submitted its ANDA. *See, e.g.* Tr. 349:6-350:14 (Park); DTX-327.1; DTX-678.2; PTX-1427 at I. [5]
>
> > [5] When AMRI first manufactured its registration batches (which was before its partnership with Eagle, (Tr. 261:10-14, 261:25-262:11 (Kirsch)) it listed broader pH ranges of 2.5 to 4.5 for the release and stability pH specifications. Tr. 263:13- 17 (Kirsch); 375:10-18 (Park). As just noted, however, by the time Eagle prepared and submitted its ANDA, the release specification had been narrowed to 3.4-3.6. Each of the registration batches had a pH upon release that was within that range, with SVA001 at the very top end of it (pH 3.64). DTX-993.0001; DDX7-1.

482. Not disputed, but Eagle clarifies that the pH specifications were narrowed to 3.4–3.6 after the manufacture of the Registration Batches and subsequent issuance of the Asserted Patents. (FF¶¶134–135; DTX-327.1; DTX-323.12-13.)

> **PFF ¶82**. Eagle conducts release testing by pooling five vials randomly selected from the over 25,000 vials that make up the batch. Tr. 216:24-217:23 (Kirsch); PTX-1443 (Aungst 2021 Tr.) 41:04-42:02.

483. Not disputed, but Eagle further notes that pooling of vials for testing pH is a "standard procedure in the industry." (Kirsch Tr. 267:22–68:13.)

> **PFF ¶83**. At trial, Eagle and AMRI's representative (Dr. Aungst) gave equivocal and somewhat contradictory evidence about whether Eagle would be authorized to release and sell a batch that was above the in-process pH specification but thereafter met the release pH specification

at the time of release testing.[6] There was no dispute at trial, however, that Eagle can and will release and sell batches that meet Eagle's in-process and release pH specifications. *See, e.g.*, Tr. 471:12-17 (Park).

[6] For example, compare DTDX-1, (Aungst 2019 Tr.) 110:6-17 and 113:13-114:4 (indicating that Eagle could release such a batch, or that Dr. Aungst did not know whether it could), with 109:16-110:4 and 111:2-112:8 (indicating that AMRI would not release such a batch).

484. Disputed. Dr. Aungst testified repeatedly and consistently that AMRI would not release a batch to Eagle for sale that failed its in-process specifications, even if it subsequently met the release specifications. (Aungst Tr. 181:17–83:4.) The purported "contradictory evidence" follows Par's counsel insisting that Aungst testify as to what the ***FDA*** would do ***if*** AMRI ***did*** release such a batch. (Aungst Tr. 181:17–84:8.) In response to Par's improper hypothetical, Dr. Aungst appropriately answered that he did not know both because he cannot speak for the FDA, and because he had already testified that such a scenario would not occur. (*See* Aungst Tr. 182:21–85:7.)

PFF ¶84. Stability specifications are the combination of physical, chemical, biological, and microbiological tests and acceptance criteria that a drug product should meet throughout its shelf-life. *See* D.I. 276, at 2; Tr. 349:16-18 (Park); 21 C.F.R. §§ 211.166-,167, .170.

485. Disputed as not supported by the trial record. Par did not present any witness at trial qualified to testify regarding FDA regulations, and Drs. Kirsch and Park were not proffered as experts on FDA regulations. (Colloquy Tr. 32:10–33:25, 196:20–24, 230:5–31:25.) Further, Par's proposed finding of fact is unsupported to

the extent it contends that stability specifications only "should," but need not, be met during a drug product's shelf life. Rather, the stability specifications form part of the ANDA Product that Eagle is seeking approval for. (DTX-327.1; DTX-678.2; PTX-1427 at EAGLEVAS0061371.)

> **PFF ¶85**. Upon FDA approval Eagle will place its first three commercial batches into a stability protocol, followed by one batch on stability every year after that. Tr. 219:22-220:7 (Kirsch). Of the few batches that are placed on stability, only a small percentage of the over 25,000 vials will ever be tested for pH. Tr. 220:8-220:13 (Kirsch).

486. Disputed. To support this proposed finding of fact, Par has only identified testimony by Dr. Kirsch, but the expert's speculation about Eagle's future conduct is not based on any documentary or supporting evidence. Dr. Kirsch was also not proffered as an expert on FDA regulations. (Colloquy Tr. 32:10–33:25, 196:20–24; 230:5–31:25.) Further, AMRI's corporate designee, Ronald Aungst, testified that the particular testing adopted for future batches could depend upon the needs of such batches. (Aungst Tr. 156:1–12.)

> **PFF ¶86**. Eagle's current stability pH specification is the same as its release pH specification, 3.4-3.6. *See* PTX-1427.

487. Not disputed.

> **PFF ¶87**. Eagle and AMRI manufactured batches SVA011-013 per Eagle's proposed commercial manufacturing process (i.e. its "optimized" process) for the purpose of PPQ studies. PTX-1443 (Aungst 2021 Tr.) 21:01-21:10, 21:12-18. PPQ studies are used to validate the overall manufacturing process, in which the manufacturer

"test[s] various portions of the batch manufacture that are not typically tested on a routine basis." PTX-1443 (Aungst 2021 Tr.) 26:03-26:19.

488. Not disputed, but Eagle clarifies that the difference in the release pH testing between the PPQ testing protocol and the testing protocol for Eagle's commercial manufacturing process, is that, in the PPQ protocol, separate pooled samples for testing are taken from the beginning, middle and end of the vial filling stage, with the results being averaged to give the final reported release measurement, whereas in Eagle's proposed commercial manufacturing process, a single set of pooled samples for testing are taken randomly from the vial filling stage to give the final reported release measurement. (Aungst Tr. 155:18–56:12.)

PFF ¶88. Eagle and AMRI's PPQ protocol included four tests. PTX-1235, at AMRIVAS0118387; PTX-1443 (Aungst 2021 Tr.) 35:13-22. One of the tests, denominated test function #3, was conducted in order to "verify the uniformity of the SVA finished product and to ensure it meets final product specifications over the entire fill." PTX-1235, at AMRIVAS0118399; PTX-1443 (Aungst 2021 Tr.) 35:23-36:11. In other words, AMRI tested the attributes of its finished drug product (vials) from various stages of the filling process to determine whether product attributes were affected by the length of the filling process. PTX-1443 (Aungst 2021 Tr.) 36:15-18; 36:21-37:02; 37:07-37:17.

489. Disputed. Eagle and AMRI's PPQ protocol included four test *functions* (*i.e.*, test function Nos. 1–4), each of which consisted of multiple tests. *See generally* PTX-1235.

PFF ¶89. Accordingly, AMRI segregated vials from the beginning of the filling process, middle of the filling process, and end of the filling process, and tested those vials to determine whether vials filled during

the different stages in the filling process had the same attributes. PTX-1443 (Aungst 2021 Tr.) 37:07-37:17; 39:03- 39:10.

PFF ¶90. AMRI and Eagle intended the release pH for the PPQ batches to be determined by using an average of the pH measurements conducted on beginning, middle, and end vials as set forth in test function 3 of the PPQ protocol. PTX-1443 (Aungst 2021 Tr.) 41:04-12.

PFF ¶91. AMRI conducted in-process pH testing on batch SVA011 and measured values of 3.50 for both the pre-filtration and post-filtration tests. PTX- 1353, at AMRIVAS0120375, 77; DTX-993.0013; DDX7-1.

PFF ¶92. On November 30, 2020, an AMRI chemist named Tamara Smith conducted release pH testing per test function 3 of the PPQ protocol for vials collected from SVA011 and recorded values of 3.54, 3.56, and 3.57. PTX-1217; PTX-1443 (Aungst 2021 Tr.) 45:20-23; 46:04-46:09; 47:25-49:05; 49:07-08; 49:10-13; 49:16-20; 87:14-19.

PFF ¶93. On December 2, 2020, another AMRI chemist named Tania Espina inadvertently repeated the test function 3 release pH testing for SVA011 and separately recorded values of 3.51, 3.49, and 3.47. PTX-1344, at AMRIVAS0120364; PTX-1443 (Aungst 2021 Tr.) 54:09-54:12; 56:08-56:13; 56:19-56:23; 58:02-59:12; 87:20-23.

PFF ¶94. Upon learning that it had inadvertently repeated the test function 3 release pH testing for SVA011, AMRI decided to report all six pH results obtained since they were all valid measurements. In other words, none of the pH tests conducted by Ms. Smith or Ms. Espina had "lab error" and that "[a]ll indications were they were accurate results." PTX-1443 (Aungst 2021 Tr.) 87:14-89:17. Accordingly, AMRI elected to utilize all the data, and all six values are now listed in the end-product lab notebook. PTX-1321, at AMRIVAS0120366; PTX-1443 (Aungst2021 Tr.) 87:14-89:17.

PFF ¶95. SVA011 is the only batch that has had six release tests conducted on it. *See,* e.g., DDX7-l.

490. Not disputed.

PFF ¶96. As discussed above, Eagle seeks the same shelf-life and storage conditions for its ANDA Product as Vasostrict. Tr. 134:13-18 (Coralic); PTX-1422, at EAGLEVAS0061162-63. That is a shelf-life of "24 months at a storage temperature of 2-8°C," and allowance for storage at 25°C "for a period of 12 months after removal from 2-8°C, not to exceed the original assigned expiry period." *See, e.g., id.*-PTX-1417, at EAGLEVAS0060909; PTX-1435, at 30; PTO Ex. 1¶43.

491. Not disputed.

PFF ¶97. Like Vasostrict's label, Eagle's label instructs pharmacists to store Eagle's ANDA Product in refrigerated conditions. PTX-1417, at EAGLEVAS0060909 ("Store between 2°C and 8°C (36°F and 46°F").

492. Disputed. Like Vasostrict's label, the package insert for Eagle's ANDA Product permits storage in both refrigerated and room temperature conditions, and leaves it up to the user to decide how to store the product. PTX-1417 at EAGLEVAS0060909.

PFF ¶98. The 24-month pH test of SVA001 when stored upright and in refrigeration measured values of 3.7, 3.8, and 3.7. PTX-208, at EAGLEVAS0047273; Tr. 220:14-18, 221:10-222:3 (Kirsch). Eagle reported three pH results because the original measurement of 3.69 was out of specification. Tr. 357:8-23 (Park); DTX-993.0001, 0013. This prompted a retest of the same pooled sample of five vials that was measured at 3.75. *Id.* At that point, the operator pooled a new sample of five vials and measured the pH to be 3.68. *Id.*

493. Not disputed.

PFF ¶99. The out-of-specification ("OOS") pH results for SVA001 prompted an investigation by AMRI that was documented in a report identified as PR661354. Tr. 223:24-225:11 (Kirsch); PTX-53. In the OOS report PR661354, AMRI ruled out analytical error or other error that could have caused the OOS pH results for SVA001. Tr. 224:14-

225:5 (Kirsch); PTX-53, at AMRIVAS0114547. AMRI concluded that "[t]he product is the likely root cause of the high pH." PTX-53, at AMRIVAS0011458; Tr. 223:24-225:11 (Kirsch); DTDX-1 (Aungst2019 Tr.) 273:16-275:4.

494. Not disputed, but Eagle clarifies that "[t]he root cause of the OOS was determined to be batch SVA001 was released at the upper limit of the pH specification . . ." (DTX-331.9; *see also* DTX-727.9; PTX-1433 at 9.) Consistently, PR661354 notes that "[t]he In Process Pre-Filtration pH was 3.7 and Post Filtration pH was 3.6, which is similar to the results obtained at 24 months." (PTX53 at AMRIVAS0114547.)

PFF ¶100. Eagle reported the pH results for SVA001 to FDA in its Module 3.2.P.8.1 Stability Summary and Conclusion, which was recently updated in June 2021. Tr. 225:12-225:21 (Kirsch); PTX-1435. In this module, Eagle explained to FDA that the release pH for SVA001 was 3.64, which is the upper boundary of its release pH specification of 3.4-3.6. PTX-1435, at 9; Tr. 225:22-226:7 (Kirsch). With respect to the OOS pH results for SVA001, Eagle stated that "[t]he root cause of the OOS was determined to be batch SVA001 was released at the upper limit of the pH specification (the release value was 3.64, which rounds to 3.6)." PTX-1435, at 9; Tr. 226:22-227:11 (Kirsch); *see* DTDX-1 (Aungst 2019 Tr.) 226:12-226:25, 227:6-227:10; PTX-217, at EAGLEVAS0047336.

495. Not disputed.

PFF ¶101. Eagle additionally submitted a statistical analysis of the pH data for its registration batches SVA001-003 when stored in refrigeration and concluded that the slopes were found statistically significant and slightly increasing over 24 months with a 12 month increase of 0.024 pH units. PTX-1435, at 9; Tr. 294:13- 18 (Kirsch); *see* DTDX-1 (Aungst 2019 Tr.) 225:10-13, 225:25-226:11; PTX-217, at EAGLEVAS0047336.

PFF ¶102. Eagle submitted the below Fig. 1 to accompany its statistical analysis of SVA001-003 when stored in refrigeration:

[Figure 1 omitted]

496. Not disputed.

PFF ¶103. Figure 1 plotted the pH data for SVA001-003 along with the trend line associated with the pH data for each batch and confidence intervals that show where the pH values would be expected to fall 95% of the time. Tr. 236:2-25, 317:20-318:9 (Kirsch). The data plotted in Figure 1 shows that the confidence interval Eagle calculated for the SVA001 pH values (the pink shaded area) included values of 3.65 or higher—i.e., within the claimed range of Par's patents— as early as 10 months. Tr. 236:2-25, 237:11-16, 319:14-320:3 (Kirsch). Similarly, the confidence interval Eagle calculated for the SVA003 pH values (the blue shaded area) included values within the claimed range of Par's patents beginning around 20 months. Tr. 237:11-238:8, 319:14-320:3 (Kirsch). SVA003 had a release value of 3.60. Tr. 238:9-12, 317:16-318:9 (Kirsch); DTX-993.0001; DDX7-1.

497. Disputed. Neither the cited testimony by Dr. Kirsch nor Par's proposed finding of fact accurately reflects the information set forth in the underlying exhibit, *i.e.*, PTX1435. No measurements between 3.7 and 3.9 were recorded for batches SVA001–003 other than the one out-of-specification measurement for SVA001 at 24 months. (DTX-993.1, 5, 7.) All measurements through 18 months for all three Registration Batches were within the specified range 3.4–3.6, and there is no evidence that any of those batches rose into the claimed range before their expiration at 24 months. (DTX-993.1, 5, 7.) There is no evidence that the pH of batch SVA001 rose into the claimed range at 10 months or at any time before the 24-month

expiration date. (DTX-993.1, 5, 7; Kirsch Tr. 319:18–20:19.) There is no evidence that the pH of batch SVA003 ever rose into the claimed range, as all pH measurements of that batch were within the specified 3.4–3.6 range. (DTX-993.1, 5, 7.)

> **PFF ¶104**. Eagle did not change its release pH specification of 3.4-3.6 after investigating the cause of the OOS pH results for SVA001 and conducting its statistical analysis of the pH data for batches SVA001-003. Tr. 223:12-18 (Kirsch); *see also* Section VIII.C.3. Accordingly, if the FDA approves Eagle's ANDA as it stands currently, Eagle could release a commercial batch at the upper limit of the release pH specification. Tr. 235:19-22 (Kirsch), 471:12-17 (Park).

498. Disputed. The data show that Eagle's optimized manufacturing process is not likely to result in a batch having a release pH of 3.64—the very result that the process optimizations were designed to avoid—and therefore Eagle is not likely to release a commercial batch at the upper limit of the release specification. (DTX-993.1, 5, 9, 11, 13.) Further, Eagle's ANDA also sets forth a stability pH specification of 3.4–3.6 that must be met for the ANDA Product during the product's shelf life. (DTX-327.1; *see also* DTX-678.2; PTX-1427 at 1; Park Tr. at 349:5–50:2; *see also* FF¶¶334–339.334) Eagle's optimized manufacturing process was designed to ensure that its ANDA Product meets the stability pH specification throughout its shelf life. (DTX-331.24; DTX-727.25; PTX-1433 at 25; FF¶374.)

> **PFF ¶105**. Instead of seeking to avoid infringement by lowering its release pH specification, thus binding itself to a value low enough to account for its product's upward drift and Par's patents, Eagle chose to

attempt to "optimize" its manufacturing in-process controls "to assure tighter control of pH" during manufacturing. PTX-1435, at 9. Eagle reiterated this to FDA in its June 2021 submission. *Id.'*, Tr. 225:12-21 (Kirsch).

499. Disputed. Eagle did not need to lower its release pH specification to avoid infringement, as that specification sets forth a non-infringing pH range of 3.4–3.6. (FF¶¶334–339.) The Asserted Claims of the Asserted Patents do not cover a product that is released between 3.4 and 3.6. (FF¶¶322, 336.) Eagle's stability pH specification also requires its ANDA Product to have a pH between 3.4 and 3.6 throughout its entire shelf life, which avoids infringement entirely. (FF¶334.) Further, as noted, Eagle has made extensive manufacturing optimizations to ensure that its ANDA Product complies with both its release and stability pH specifications, thereby avoiding infringement. (FF¶¶361–379.)

PFF ¶106. These manufacturing changes were set forth in Module 3.2.P.3.3 as discussed above in Section VIII.C.E *See* PTX-1435, at 10; DTX-323.0016. "Specifically, the pH adjustment steps in the batch record were optimized for better control of the batch pH to the middle of the pH specification (i.e. 3.50)." PTX- 1435, at 25; Tr. 366:18-367:14, 372:9-21 (Dr. Park: the goal of Eagle's manufacturing changes is to achieve a "homogeneous" solution and to have a "narrower tighter pH reading.").

500. Not disputed, but Eagle clarifies that PPF ¶107 does not capture the full extent of manufacturing changes Eagle has made. (*See* FF¶¶361–379.) Further, as noted above, while Figure 4 of DTX-323.16 cited by Par provides an abbreviated, graphical representation of Eagle's modified manufacturing process, the full

manufacturing process is described in the batch records, including in Eagle's Proposed Commercial Batch Record. (*See generally* DTX-324.)

PFF ¶107. The supposed "optimizations" did not achieve the goal of attaining a homogenous solution. As evidenced by the six release pH measurements for SVA011 of vials filled at nearly the same time (described in Section VIII.C.5), the pH continued to vary by as much as 0.1 pH units between sample vials pulled from the beginning and end of the filling run. Dr. Kirsch presented the data on the following graph:

pH Variability in SVA011

PDX3-34; Tr. 242:13-246:17 (Kirsch). Dr. Kirsch explained that the additional pH measurements for SVA011— that were not available for any other batch—provide a better sense of pH variability among vials filled from a single batch of Eagle's product than any other available data. Tr. 244:23-245:3 (Kirsch). He further opined that similar variability would be expected in other batches of Eagle's ANDA Product. Tr. 244:15-22 (Kirsch).

PFF ¶108. Thus, this evidence on variability—which Eagle has not submitted to the FDA *(see, e.g.*, PTX-1435 (reporting on data for only batches SVA001-009))— shows that Eagle's optimizations failed to achieve their goal. Tr. 240:1-246:17 (Kirsch).

PFF ¶109. The data derived from Eagle's stability testing of its "optimized" batches also demonstrates that even when Eagle uses its supposedly "optimized" manufacturing process (i.e., for batches SVA007-9, 11-14, 16-17), the pH of Eagle's ANDA Product can drift upward significantly between the time of the final in-process (post-filtration) testing and release testing. DDX7-1; Tr. 244:1-14 (Kirsch), 460:7-461:7 (Park).

PFF ¶110. For example, the pH of SVA011 at the post-filtration in-process test was 3.50 yet had pH values upon release testing (reported as "initial") as high as 3.56 and 3.57—a 0.06 and 0.07 pH unit increase. DDX7-1, Tr. 244:1-14 (Kirsch), 460:7-19 (Park).[7] Similarly, the post-filtration in-process pH test for SVA012 was 3.44, yet it had pH values on release as high as 3.50—a 0.06 pH unit increase. DDX7-1; Tr. 460:20-24 (Park). SVA008 also exhibited a 0.04 pH unit increase between the post-filtration in-process pH test and release. DDX7-1.

[7] Dr. Park testified that the goal of Eagle's optimizations was to achieve a "homogenous" solution with "a narrower tighter pH reading." Tr. 366:18-367:14 (Park). In order to test whether a "homogenous" solution with "narrower tighter pH reading[s]" was actually achieved, one would need to take multiple repeat pH measurements from vials filled at or near the same time. See, e.g., Tr. 244:23- 245:3; 245:23-246:3 (Kirsch). Dr. Kirsch explained that the best batch to assess whether the batches are in fact uniform is SVA011, because AMRI conducted six separate release pH tests on the batch. Id. However, instead of the pH values all measuring very close together, which one would expect if the batch were truly uniform, the pH values differed by as much as 0.1 pH units. Tr. 240:6-243:15 (Kirsch).

501. Disputed. As described above, the optimizations of Eagle's manufacturing process have been successful in tightening and lowering the release and stability pH measurements for Eagle's ANDA Product. (*See* FF¶¶386, 394–404.) All available data show that Eagle's product will maintain pH between 3.4 and 3.6 (*id.*; *see also* Park Tr. at 349:21–50:9; DTX-993), and Eagle's data, as a whole, do not exhibit the alleged variability that Par claims exists, based on its cherry-picking of just six values out of 344 pH measurements. (*See* DTX-993; FF¶¶413–430.) Indeed, even the six measurements selected by Par have a tight pH range of pH 3.47 to 3.57, centered around the target of 3.50, well below the claimed pH range

and even the "upper end" of the release specification that Par contends may result in drift into the claimed pH range. (*See* DTX-993; DDX7-3.) Par also neglects to mention the subsequent stability data for SVA011 at 1, 3, and 6 months, which reported pH values of 3.49, 3.48, and 3.48 respectively, and thus showed a ***downward*** trend in pH after release, contrary to Par and Dr. Kirsch's assertions. (*See* DTX-993.9; DDX7-3.)

> **PFF ¶111.** Eagle's expert Dr. Park agreed that 0.07 or 0.06 pH unit increases from post-filtration pH testing to release testing is "representative of" and could be expected of commercial batches:
>
> > Q. Okay. So it's representative of the commercial batches to expect a difference in-process versus the release reading could be in the order of .07 or .06, because that's the data that we have now; is that correct?
> >
> > A. Yes.
>
> Tr. 461:3-7. Given that Eagle's current in process specification would allow commercial manufacture at pH 3.54, adding 0.06 or 0.07 pH units to the in-process specification would result in a pH at release of 3.60 or 3.61, within the upper end of the release specification. Tr. 246:4-17 (Kirsch).

502. Disputed. (*See* FF¶¶386–404) Par recites Dr. Park's testimony out of context. Dr. Park repeatedly made clear that any variability that exists with Eagle's data is tightly centered around 3.50 (Park Tr. 358:11–22; 360:6–13; 361:2–16; 377:21–78:3), and thus his testimony does not provide support for Par's theory of tacking on the full extent of the alleged variability of 0.06 or 0.07 pH units to the top end of the in-process specification of 3.54. Further, Dr. Kirsch admitted that,

"batches SVA7 through 13 fluctuate to a degree in the neighborhood of [] .05 and generally located around 3.50, 3.51, 3.52." (Kirsch Tr. 295:23–96:2.) No data show that Eagle's ANDA process results in variability between 3.54 and 3.60 or 3.61 on release. (DTX-993.1, 13.) Rather, the highest release pH value measured for Eagle's optimization manufacturing process was 3.57 for SVA011, which was the very top of the full range of alleged variability. (DTX-993.1, 13; DDX7-3.) Most other release pH values for the batches made with Eagle's optimized manufacturing process were much lower. (DTX-993.1, 13; DDX7-3.)

> **PFF ¶112.** Upward drift was also observed following release. The only "optimized" batches that had pH stability data—SVA007-9, 11-13 *(see* Section VIII.B)—demonstrated significant post-release drift, oftentimes within the very first month thereafter.[8] Accordingly, Dr. Park agreed that the data from Eagle's stability studies on the optimized process showed an increase in pH from release through shelf life of as much as .06 pH units:
>
> > Q. Yes. No, that's not my question. My question was here we showed it from release through product life. We saw increases of .05, .04, .04, .06, .04, .05 in the data that you say is representative of the batch between release and shelf life; correct?
> >
> > A. Yes.
>
> Tr. 474:1-6.
>
> > [8] At times, Eagle has taken the position that infringement must be measured at or around the time of manufacture, rather than during the shelf life. Eagle did not pursue that interpretation at trial, and indeed, the proper time for the argument was at claim construction. Now that the evidence is in though, it is plain that such a construction would have been of no help to Eagle. The real-world evidence shows significant drift right after release.

> Even with the very limited available data, the trial record shows upward pH drift of 0.04 units between release and the 1 month measurement, i.e. around the time of manufacture and before sale. Eagle cannot avoid infringement by making a product just short of the pH finish line and then letting it drift across the line after release.

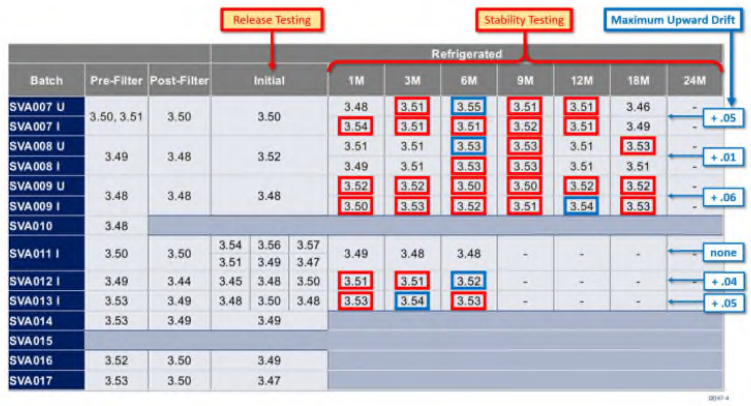
503. Disputed for the reasons set forth in FF¶¶413–430. Throughout trial, Dr. Park repeatedly testified that there is no upward drift or trend in Eagle's data based on its optimized batches. (Park Tr. 358:11–22; 360:6–13; 361:2–16; 377:21–78:3.) Further, of the optimized batches that have stability data (SVA007–13), the most current pH measurements for these batches are: 3.46 (upright) and 3.49 (inverted) for SVA007 at 18 month; 3.53 (upright) and 3.51 (inverted) for SVA008 at 18 month; 3.52 (upright) and 3.53 (inverted) for SVA009 at 18 month; 3.48 for SVA011 at 6 month; 3.52 for SVA012 at 6 month; and 3.53 for SVA013 at 6 month. (DTX-993.1, 13.) The highest pH value is only at 3.53 (SVA009, inverted), and these values closely center around 3.50. (DTX-993.1, 13.) Moreover, around half of these measurements (four out of nine) are lower than the release values for these batches (e.g., SVA007 upright (3.50 release vs 3.46 at 18 month), SVA007 inverted (3.50 release vs 3.49 at 18 month), SVA008 inverted (3.52 release vs 3.51 at 18 month), and SVA011 (3.52 release vs 3.48 at 6 month)), which further demonstrate that there is no discernable pattern of an upward drift. (DTX-993.1, 13.) Eagle further objections to footnote 8, as the contentions set forth therein are not proper

proposed findings of fact, and are not supported by any citation to the record evidence.

> **PFF ¶113.** Dr. Park confirmed other facts regarding post-release drift as well. He agreed that all but one "optimized" batch with available stability data experienced upward pH drift after release. PTX-1442; Tr. 450:12-455:11, 468:13-23 (Park). The data, confirmed by Dr. Park, shows that upward drift was as much as 0.06 pH units, with four of the six batches experiencing upward pH drift of at least 0.04 pH units while on stability. PTX-1442; Tr. 450:12-451:1, 451:22-23, 452:2-6, 452:19-454:5, 454:17-455:11, 468:13-23 (Park). Dr. Park also confirmed that there was as much as 0.04 pH units of upward pH drift within a month of release in some of the batches. *Id.*

504. Disputed. Par misrepresents Dr. Park's testimony. Although Par cites to pages of Dr. Park's testimony, nothing Par cites supports its allegation that there is an upward pH drift in the optimized batches. To the contrary, Dr. Park repeatedly testified that there is no general upward drift or trend in Eagle's data based on its optimized batches. (Park Tr. 358:11–22; 360:6–13; 361:2–16; 377:21–78:3.) Further, the full data for the optimized batches, as presented by Eagle, speak for themselves and do not present any discernable pattern of upward drift. (*See* DDX7-1; DTX-993; Park Tr. 361:2–16; *see also* DDX2-19 (showing demonstrative plot of data.)

> **PFF ¶114.** The stability data is illustrated below on an annotated version of Eagle's DDX7-4. The cells with red boxes are pH measurements that exceed the release pH value for that particular batch. [9] The cells with blue boxes show the maximum drift above the release pH value for a particular batch:



As can be seen in the annotated demonstrative, Eagle took 45 pH measurements of its "optimized" batches after release while stored in refrigeration, and 32 of them drifted upward after release. Dr. Park confirmed that these increases are representative of an Eagle batch after release. Tr. 474:1-6 (Park); PTX-1442.

[9] For PPQ batches SVA011-13 that have multiple release values, the average release value for each batch was used to illustrate the pH increase after release. The average release pH values for SVA011-13, were 3.52, 3.48, and 3.49 respectively. DTX-993.0001.

505. Disputed. As an initial matter, PFF ¶114 cites and discusses a brand new demonstrative that was never presented at trial, and includes assertions for which there is no citation to any trial testimony, *e.g.*, "Eagle took 45 pH measurements of its 'optimized' batches after release while stored in refrigeration, and 32 of them drifted upward after release." On substance, for the reasons set forth in FF¶¶394–403, 413–430, Eagle disputes that these data show any discernable trend in Eagle's data demonstrating an upward drift towards the claimed pH range. Indeed, of the 32 measurements highlighted by Par, the highest recorded value is only pH 3.55. Eagle also incorporates by reference FF¶503.

PFF ¶115. In summary, the data generated on Eagle's "optimized" batches shows that Eagle has not sufficiently controlled the pH of its product to prevent infringement of Par's patents. In particular, future batches manufactured at the upper limit of Eagle's post-filtration in-process pH specification (3.54), would be expected to have release values as much as 0.07 pH units higher (i.e., at least as high as pH 3.61) by the time of release testing, which would place the batch within the upper-end of the release pH specification. Tr. 245:4-246:17 (Kirsch), 461:3-7, 473:7-21, 474:1-12 (Park).

PFF ¶116. Moreover, the evidence from Eagle's registration batches demonstrates that batches released at the upper end of the release pH specification would be expected to have pH values between 3.7-3.9 during their shelf-lives. *See* Section IX.A. The "optimization" process has not changed the behavior of the ANDA Product following release. Stability data for batches made with Eagle's "optimized" process likewise exhibited upward pH drift from the time of release to the stability test date on the order of 0.05 and 0.06 pH units. DTX-993.0001; DDX7-4. This is sufficient drift to move the pH of Eagle's ANDA Product at release from pH 3.59 or 3.60 into the infringing pH range of 3.65-3.94 during the life of the product. Tr. 245:4-246:17, 251:3-9 (Kirsch), 474:1-12 (Park). Accordingly, if Eagle releases a product at the upper end of the release specification, infringement will occur. Tr. 238:1-8, 239:16-246:17, 251:3-9, 251:20-256:3, 317:16-319:2 (Kirsch).

506. Disputed for the reasons set forth in FF¶¶340–430. Further, Par's proposed findings of fact improperly combine Eagle's proposed manufacturing and release pH specifications, data from Eagle's Registration Batches made with an outdated manufacturing process, and data from Eagle's batches made with its optimized process to speculate what a hypothetical batch will do. As explained in Eagle's Proposed Conclusions of Law, filed concurrently herewith, that analysis is irrelevant to the infringement question in this case. Eagle's ANDA release and

stability specifications ***preclude*** a batch that would be released at the upper end of the release specification that drifts upward out of the stability specification and into the claimed range, resulting in infringement. (FF¶¶334–339.) And the data for batches made using Eagle's optimized manufacturing process show that Eagle is not likely to release a batch at the upper end of the release specification. (FF¶¶373–374, 386–429.) Moreover, Par's theory is inconsistent with the data for the additional reason that the batch with the second-highest release pH, SVA003 at pH 3.60, did not rise into the claimed pH range at any time during its shelf life, even though it was made with the unoptimized manufacturing process, which allowed significant variability. (FF¶430.)

> **PFF ¶117.** Eagle stipulated that its product satisfies every limitation of the Asserted Claims of the '785 and '209 patent, except the limitation from independent claim 1 of each patent that recites "wherein the unit dosage form has a pH of 3.7- 3.9." *See* D.I. 268 (Second Amended Joint (Proposed) Pretrial Order), ¶ 58; June 30, 2021 Hearing Tr. at 65:22-25.

507. Not disputed.

> **PFF ¶118.** Accordingly, Eagle's ANDA Products will be encompassed by each asserted claim if, at any time during their approved shelf-life, they have a pH within the claimed range of 3.7-3.9. *Id.*

508. Disputed. While Eagle does not dispute that its ANDA Product may satisfy each limitation of the Asserted Claims of the Asserted Patents other than the claimed pH based on its specifications and label instructions, to be encompassed by

the Asserted Claims for direct infringement purposes, the '209 patent requires that Eagle's ANDA Product have both the claimed pH and claimed impurities at the time it is administered, while the '785 patent requires that Eagle's ANDA Product have both the claimed pH and claimed impurities at the time it is made, used, offered for sale or sold.

> **PFF ¶119.** Based on the trial record, Par has proven by a preponderance of evidence that if Eagle's ANDA Products are manufactured within the upper-end of the proposed release pH specification (i.e., at or above pH 3.60), it is more likely than not that products sold by Eagle will have a pH at or above 3.65 (and less than 3.94), and hence within the infringing range, during their shelf-life. *See* Section IX. Eagle's refusal to lower the upper limit of its release pH specification is evidence that Eagle can and will use the full scope of its authorization. This was further confirmed by Eagle's package insert that likewise states that its product is "adjusted ... to pH 3.4-3.6," which is the full range of Eagle's release specification. PTX-1417 at EAGLEVAS0060906. Dr. Park similarly testified that Eagle's "optimization batches were made by using new manufacturing changes so that the pH can be more represented between 3.4 and 3.6." Tr. 352:8-14 (Park).

509. Disputed.[4] Eagle disputes this legal conclusion, and incorporates by reference FF¶¶361–406, 425–430, as well as its Proposed Conclusions of Law on Noninfringement.

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[4] Par has indicated that it will object to Eagle's reliance on the impurities for Lot 788435 on the basis that that evidence was addressed during the cross-examination of its expert, Dr. Kirsch, as opposed to during a direct examination of Defendants' witness. To the extent Par's objection is sustained, Eagle likewise objects to PFF ¶119. Par cites PTX-1417 at EAGEVAS0060906 for the assertion that the statement in Eagle's package insert "adjusted … to pH 3.4-3.6" is "evidence that Eagle can and will use the full scope of its authorization."

PFF ¶120. If its ANDA is approved, Eagle would be authorized to sell such products at any point during their shelf-life, and Eagle would thereby directly infringe the Asserted Claims of the '785 patent (claims 1, 5 and 8) by selling those products at a point in time when they had a pH within the claimed range. Tr. 251:10-252:24 (Kirsch); *see supra*, ¶¶ 53, 70-86, 96-116.

510. Disputed.[5] Eagle disputes this legal conclusion, and incorporates by reference FF¶¶334–339, 386–406, as well as its responsive post-trial brief on non-infringement. In fact, on the contrary, it is undisputed that, based on its ANDA release and stability pH specifications, Eagle would ***not*** be authorized to sell products that have a pH in the claimed range at any time during the shelf life. (FF¶¶334–339.)

PFF ¶121. Eagle's principal defense was that having "optimized" its manufacturing process, it would no longer be possible for it manufacture batches with a pH within the upper-end of its release pH specification. *See, e.g.*, Tr. 380:11-17 (Park). The Court should find however, that the evidence demonstrated otherwise.

However, Par cites to no testimony where any witness testified to that interpretation of PTX-1417 at trial.

[5] Par has indicated that it will object to Eagle's reliance on the impurities for Lot 788435 on the basis that that evidence was addressed during the cross-examination of its expert, Dr. Kirsch, as opposed to during a direct examination of Defendants' witness. To the extent Par's objection is sustained, Eagle likewise objects to PFF¶120. Par cites to no testimony where any witness testified to Par's new assertion that Eagle would be authorized to ***sell*** infringing products "at a point in time when they had a pH within the claimed range" and thereby directly infringe. Rather, Dr. Kirsch asserted only that Eagle's ANDA Product is likely to infringe at some point during its 24-month shelf life, not at the time of its sale. (Kirsch Tr. 252:9–253:4.)

511. Disputed. (*See* FF¶¶361–406, 425–430.)

> **PFF ¶122.** In particular, both experts agreed that future batches of Eagle's product could be expected to have release pH values as high as 0.07 pH units higher than the post-filtration in-process test for a particular batch. Tr. 242:13- 244:22 (Kirsch), 461:3-7, 473:7-21 (Park); *see supra*, 109-111, 15. As described above in Section VIII.C.2, Eagle's optimization/confirmation batches were made with a narrower in-process pH specification than will be used for commercial batches, and none of Eagle's optimized batches had a post-filtration in-process pH measurement above 3.50. Accordingly, Eagle's pH data for its optimized batches was not representative of the full scope of what Eagle would be authorized to make if Eagle's ANDA were approved with its in-process specification of 3.42-3.54. *See* Section VIII.C.2.

512. Disputed. (*See* FF¶¶394–404.) Eagle further notes that Par's proposed finding of fact supports Eagle's position that it is ***not*** likely to manufacture a product that is released at the upper end of the release pH specification and that then drifts into the claimed pH range. (*See* FF¶373.) Indeed, Par concedes that none of Eagle's optimized batches had a post-filtration in-process measurement above 3.50, (PFF ¶122), and Par does not suggest that such a batch is likely to have a pH in the claimed range at any time during its shelf life, even tacking on the maximum amount of variability and drift that Par's speculative theory would allow.

> **PFF ¶123.** The available stability data for Eagle's "optimized" batches—a significant portion of which the FDA does not have—shows that Eagle has not solved the upward drift problem, as the data shows a tendency for the pH of Eagle's products to drift upward after release, oftentimes within the very first month. *See* Section IX.C. Indeed, all but one of the six batches made using the "optimized" manufacturing process drifted upward in pH after release, by as much as 0.06 pH units.

PTX-1442; Tr. 450:12-455:11, 468:13-23, 473:7-13, 474:1-6 (Park); *see supra*, ¶ 112-114, 116.

513. Disputed. (*See* FF¶¶394–404,425–430.) The pH for the one post-optimization batch that Par and Dr. Kirsch contended best demonstrates the behavior of Eagle's ANDA Product and purportedly shows the continued "variability" in Eagle's optimized manufacturing process, SVA011, went ***down*** after release, from a high of 3.57 on release, down to 3.49 at 1 months, 3.48 at 3 months and 3.48 at 6 months. (*See* DDX7-4; DTX-993.1.) In addition, the stability pH of SVA007 and SVA008 also went down compared to their release pH measurements. (*Id.*) Par also fails to identify any evidence that the data demonstrate that Eagle's ANDA Product "drifted," as opposed to experienced minor variability in pH measurements. (*See* Park Tr. 368:10–16.)

PFF ¶124. Taking these together, these facts demonstrated that if Eagle's ANDA is approved, Eagle would be authorized to release products for commercial sale at a pH that drifts upward over time and into infringing territory during their shelf life. *See* Section IX.

514. Disputed. (*See* FF¶¶334–339, 386–406.) As noted, it is undisputed that, based on its ANDA release and stability pH specifications, Eagle would ***not*** be authorized to sell products that have a pH in the claimed range at any time during the shelf life. (*See* FF¶¶334–339.)

PFF ¶125. Eagle's product would be labeled to have a 24 month shelf-life when stored in refrigerated conditions *(see, e.g.*, PTX-1417, at EAGLEVAS0060909; PTX-1435, at 30; PTO Ex. 1 ¶ 43), such that

Eagle would be permitted to sell its products at times when the pH would be expected to have risen to 3.7 or higher, and thereby directly infringe the patent. *See* Tr. 251:3-9, 254:12-255:24 (Kirsch); *supra* ¶¶ 96-116.

515. Disputed.[6] (*See* FF¶¶334–339, 439.) Par has proffered no evidence at trial that Eagle will sell its ANDA Product at pH 3.7 or higher. Further, it is undisputed that, based on its ANDA release and stability pH specifications, Eagle would ***not*** be permitted to sell products that have a pH in the claimed range at any time during the shelf life. (*See id.*)

PFF ¶126. Eagle's other main defense is to point to its stability specification, but the Court should find that specification will not prevent infringement by Eagle.

516. Disputed and calls for legal conclusions. (*See* FF¶¶334–339; Def.'s Resp. Br. at Section II.)

PFF ¶127. As explained in Section VIII.C.4, the stability specification sets out acceptance criteria that a drug product ***should*** meet throughout its shelf-life. *See* D.I. 276, at 2; Tr. 349:16-18 (Park); 21 C.F.R. §§ 211.166-.167, .170. This is in contrast to the release specifications,

[6] Par has indicated that it will object to Eagle's reliance on the impurities for Lot 788435 on the basis that that evidence was addressed during the cross-examination of its expert, Dr. Kirsch, as opposed to during a direct examination of Defendants' witness. To the extent Par's objection is sustained, Eagle likewise objects to PFF¶125. Par cites to no testimony where any witness testified to Par's new assertion that Eagle would be authorized to "sell its products ***at times when the pH would be expected to have risen to 3.7 or higher***" and thereby directly infringe. Rather, Dr. Kirsch asserted only that Eagle's ANDA Product is likely to infringe at some point during its 24-month shelf life, not at the time of its sale. (Kirsch Tr. 252:9–253:4.)

which ***must*** be met by each and every commercial batch, and acts as the gatekeeper in determining what products Eagle will or will not be authorized to sell. Section VIII.C.3; Tr. 299:8-19. By contrast, the stability specification comes into play *post hoc* and involves sample testing conducted under much more limited circumstances. *See* Section VIII.C.4; Tr. 299:8-19. In particular, only a small subset of Eagle's commercial product would ever be tested per Eagle's stability protocol and only after infringement could occur. *Id.* Tr. 219:22-220:7 (Kirsch).

517. Disputed as not supported by the trial record. Par did not present any witness at trial qualified to testify regarding FDA regulations, and Drs. Kirsch and Park were not proffered as experts on FDA regulations. (Tr. 32:10–33:25, 196:20–24, 230:5–231:25.) Nor has Par presented any evidence at trial directed to its allegation that the FDA only requires release specifications, but not stability specifications, be met. (Tr. 32:10–33:25, 196:20–24, 230:5–31:25.) Rather, both the release and stability specifications together define a product that may not have the claimed pH at any time during the shelf life, and therefore cannot infringe, (*See* FF¶¶334–339.)

PFF ¶128. Accordingly, Par has proven by a preponderance of evidence that Eagle would directly infringe the Asserted Claims of the '785 patent under § 271(a) by selling infringing products. Tr. 251:10-252:24 (Kirsch).

518. Disputed. (*See* FF¶439.)

PFF ¶129. Par has also proven by a preponderance of the evidence that Eagle would induce infringing use of its products. Eagle's proposed package insert/label instructs clinicians to administer its ANDA Products to patients in order to increase their blood pressure. Tr. 131:20-132:3, 135:4-138:21 (Coralic). This can occur at any time

during the products' shelf-life, including at times when the products have a pH within the claimed range. *See* Tr. 254:12-255:16 (Kirsch); *supra*, 14-15.

519. Disputed. (*See* FF¶¶441–446.) In addition, Par has not presented any evidence at trial that Eagle specifically intends clinicians to administer its ANDA Product, while the product has a pH within the claimed range of 3.7 to 3.9.

PFF ¶130. Clinicians will not test the pH of Eagle's product before they administer it, but will instead administer it at whatever pH it has at the time it is provided for administration to the patient. Tr. 137:15-138:1, 144:13-21, 146:18- 147:4 (Coralic). Accordingly, clinicians will infringe the '785 patent, by using an infringing product, whenever the product is provided to them with a pH within the infringing range. *Id.*, *see* Tr. 254:12-255:16 (Kirsch). And, Eagle's package insert/label will have encouraged and promoted that infringing use. *Id.*; *see supra*, ¶¶14-15. By virtue of this lawsuit and the evidence presented by Par that Eagle's products can and will have a pH of 3.7-3.9 during their shelf-life, along with Eagle's refusal to lower its release pH specification, Par has presented evidence of Eagle's specific intent sufficient to establish by a preponderance of the evidence that Eagle would be liable for inducing infringement of the '785 patent. *See* Section IX.

520. Eagle does not dispute that clinicians will not test the pH of Eagle's product before they administer it, but otherwise disputed. (*See* FF¶¶334–343, 386–406, 441–446.)

PFF ¶131. Accordingly, if Eagle's ANDA were approved, Eagle would induce infringement of the '785 patent by instructing medical professionals to administer Eagle's product, after storing the product in refrigeration for up to 24-months, at times when Eagle's product has a pH between 3.7-3.9. Tr. 254:12-255:16 (Kirsch); *see supra*, ¶¶ 129-130.

521. Disputed. (*See* FF¶¶334–343, 386–406, 441–446.)

PFF ¶132. For similar reasons, Par has proven by a preponderance of evidence that if Eagle's ANDA were approved, the commercial sale of Eagle ANDA Products would induce infringement of the Asserted Claims of the '209 patent. *See supra,* ¶¶ 120-131.

522. Disputed. (*See* FF¶¶334–343, 386–406, 441–446.)

PFF ¶133. The Asserted Claims of the '209 patent contain a single method step: "administration" of the claimed vasopressin drug product. Tr. 135:4-138:21 (Coralic). And it is undisputed that Eagle's package insert/label instructs clinicians to practice the claimed method of administration. *See* D.I. 268 (Second Amended Joint (Proposed) Pretrial Order), 58; June 30, 2021 Hearing Tr. at 65:22-25; Tr. 135:4-138:21 (Coralic).

523. Disputed. The '209 patent also prescribes specific dosages that must be used. Further, Eagle's Label does not instruct clinicians to practice the claimed method of administration at the time Eagle's ANDA Product has a pH of 3.7 to 3.9. (*See* FF¶¶442, 444.)

PFF ¶134. Thus, for the same reasons that Eagle would induce infringing use by clinicians of its ANDA Products at times during their shelf-life when they have pH values that fall within the infringing range, so too Eagle would induce clinicians to perform the claimed method of the '209 patent at times when Eagle's ANDA Products satisfy the pH limitation. *See supra,* ¶¶ 129-131; Tr. 135:4-138:21 (Coralic), 252:25:253:21, 254:12-24 (Kirsch).

524. Disputed. (*See* FF¶¶334–343, 386–406, 441–446.)

PFF ¶135. Eagle's principal defense to induced infringement is that it allegedly lacks the specific intent to induce clinicians to infringe. But, the Court should find that Eagle's specific intent is evident from the circumstantial evidence. *See infra*, ¶ 136.

525. Disputed. In addition to the lack of specific intent, there is no evidence that Eagle's ANDA Product will have the claimed pH of 3.7 to 3.9 during its shelf-life. (*See* FF¶¶334–343, 386–406.)

> **PFF ¶136.** In particular, Eagle's package insert and labeling instructs clinicians to administer Eagle's ANDA Product in accordance with the claimed method of administration, which will therefore cause them to infringe any time the clinician administers a vial that has a pH within the claimed range. *See supra*, ¶¶ 129-134. By virtue of this lawsuit and the evidence presented by Par that Eagle's products can and will have a pH of 3.7-3.9 during their shelf-life, along with Eagle's refusal to lower its release pH specification, Par has presented evidence of Eagle's specific intent sufficient to establish by a preponderance of the evidence that Eagle would be liable for inducing infringement of the '209 patent. *See* Section IX.

526. Disputed. (*See* FF¶¶334–343, 386–406, 441–446.)

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